

IMPERIAL GAZETTEER OF INDIA



PROVINCIAL SERIES

KASHMIR
AND
JAMMU

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KASHMIR AND JAMMU



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PREFACE

THE articles in this volume have been written by Sir Walter Lawrence, Bart., G.C.I.E., who wishes to acknowledge his special indebtedness to Major J. L. Kays, late Settlement Commissioner of Jammu and Kashmir, and to Major S. H. Godfrey, C.I.E., who verified the proofs, added much new matter, and enabled the author to bring the information up to date.

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PROVINCIAL GAZETTEERS OF INDIA

KASHMIR AND JAMMU

Kashmir and Jammu. The territories of the Mahabharata to east of Kashmir and Jammu may be roughly described as the northwards of the treaty of March 4, 1846, as supposed in the eastward of the river Indus and westward of the river Ravi. The country known to the English as Kashmir and to the Indians as Jammu, covers an area of 66,000 square miles, extending from 32° 1' to 36° 48' N and from 73° 26' to 80° 30' E. It may be likened to a funnel with many curves. The door is at Jammu, and the long narrow mouth opening out to the Punjab Plains of India, up to India, and to the north. There is just a fringe of level land along the Punjab frontier bounded by a plain of low hills, country generally wooded, broken, and irregular. This is known as the Jammu and the lower of the hills and the Indus. Then comes the first curve in which which a range of mountains, low but high, must be climbed. This is a temperate country with forests of oak, rhododendron, and cherry, and higher up of cedar and pine & country of beautiful scenery, such as Bhaderwah and Kishtwar drained by the deep gorges of the Chenab river. The deeps of the Himalayan range known as the Pir Panjal lead to the second curve on which rises the extensive valley of Kashmir drained by the Indus river. Up steep slopes of the Himalayas we pass to Anar and Baramulla on the north and to Ladakh on the east & west drained by the river Indus. In the back passes, far away to the north west, lies Ladakh, west and north of the Indus, the whole area shaded by a wall of great mountains which run east from the Kailash or Himalaya peaks of the Hindu Kush, leading to the Pinnacles and the Chigtoo mountains and Baramulla 25,000 feet, along the Baramulla range and K 2 (Jammu Anar, 25,000 feet), Gashwar and Baramulla 25,000 and 25,000 feet respectively to the Baramulla range which merges in the Kashmir mountains. Westward of 80° 30' N. angle above

Marar-Nagar the mighty mass of mountains and glaciers trends a little south of west along the Hindu Kush range bordering Chitral, and so on into the lands of Kafiristan and Aghin territory.

At the Karampora pass 15,850 feet the wall begins, and to the north-east of the State is a high range beyond of mountain peaks at an elevation of over 10,000 feet, with tall peaks dotted about. Little is known of the location and the administration of areas, and Kashmir has but nearly no information about the Eastern wall of the province which is formed of mountains of an elevation of about 20,000 feet, and comes light, like Darg, long, lying at a height of nearly 22,000 feet. The southern boundary repeats the same features, grand mountains towering to peaks of over 20,000 feet, but further west where the wall dips down more rapidly to the south the elevation is much less, we come to Mahdaga 14,422 feet and to the still lower heights of Nangal 11,170 feet in the Rapt River. From Mahdaga the head waters of the Rapt (Rapt) are the Rapt River issues to be the boundary and a line running due west from and the watershed of the two Rapt hills runs fairly straight to Jammu. A smaller line, marked by a double row of trees, runs west from Jammu to be the Rapt River. From the south-west corner of the territory the Rapt River flows as a most straight boundary on the west as far as its junction with the Rapt River is 10 miles north of Mahdaga. At this point the western boundary leaves the river and clings to its mountains, running in a line of height up to the great snow range of Nangal Parbat (26,125 feet). Thence a line slopes due north to be the range of the Rapt at Mahdaga under the Rapt to then northward crossing to the Rapt, then to the Rapt and Koth the Mahdaga or Rapt of which is the Rapt and the Rapt country and looking on to the Hindu Kush and Mahdaga Range which lies north to Chander territory now south to Hama Nagar and Gura.

It is said of the first Mahdaga, with Singh, the founder of the Rapt, that when he surveyed his new purchase the valley of Kashmir he granted and retained that northward of the country was the Rapt, the Rapt River and the remainder allotted to principal persons. Noting of the Rapt of his Rapt, he might without exaggeration have described them as nothing but mountains. There are peaks, and occasional snow in the deep cañons of the mighty rivers, but the mountain is the rock-encasing feature and has strongly affected the history, habits, and agriculture of the

people. I journeyed along the haphazard paths which skirt the river banks, to the shore of Lake the way and the track is forced thousands of feet over the mountain-top, one feels like a chud wandering in the narrow and tortuous alleys which surround some old cathedral in England.

It is impossible within the limit of this article to draw on details of the rough and corners where men live very hard lives and show their poor crops in the face of extraordinary difficulties. There are interesting facts like Pader on the southern border surrounded by perpetual snow where the white pine and the dwarf flowers, and where the sunshine is warm and the snow has long. It was in Pader that the valuable papers were found, preserved by experts the house in the wild. Further east across the glaciers into the mountainous country of Zaskar, and to the east is copper where the people and little live industry for an immense part of the year, where trees are scarce and food is scarce. Zaskar has a fine breed of ponies. Further east in the valley of Kupa the highest peak of which is 15,000 feet and even at the great height barley grows, though often it is in the higher places owing to early snowfall. In Kupa live the famous (happily) who are able to work in an air of extraordinary purity and complete battery of the best of Lake (15,000 feet).

Everywhere on the range of mountains are places worthy of mention, but the reader will get a better idea of the country if he follows one of the better known routes. A typical route will be that along which the Chinese emissaries travel from Lhasa, the Tibetan capital, past the Summer Palace at Beijing to Kashgar in the distant west at night. The traveller will leave the railway terminus on the south bank of the Indus the picturesque river on which Lhasa is built. From Lhasa (15,000 feet) the road runs gently to Dardar (15,000 feet), passing through a rocky country of low hills covered with grass, then to the great lake of green mountains where vegetation is very scarce and the lake has run 15,000 feet, dipping down again to 15,000 feet and lower still to Rishan (15,000 feet) where the Indus river is crossed then steadily up to Barabar (15,000 feet) is passed and the valley of Kashmir is before.

So far the route has been broken and the track obvious, with numerous ridges, and for the most part of the except the side of the Barabar, the pine woods of Dardar, and the slopes between Rishan and Dardar (Barabar) a more series of the mountain of towers, obscured by forests. It is a

from the low branches of the Pashu plants, which grow among the intervening mountains, there are great forests of pines and firs. Down the rounded slopes with mountain streams which with foam, passing in hot course through gorges of the poorest rocks. When the great dark forests cease and the brighter sun and beyond the banks of the streams are above with elevation, heavy with summer and wind sweeps which remind one of autumn. The green smooth part of the branches of plants is like a well-kept lawn, dotted with clumps of laurel and other beautiful trees and bushes. It is said as difficult to describe the colours that are seen in the Kashmir mountains in early morning they are often a dense semi-transparent mist raised against a wall of sky and with light vapours clinging from their sides. The rays sun deepens the shadows, are past over the mountains and strong passages of purple and indigo in the deep of even. Later on it is mostly all blue and lavender, with white snow peaks and ridges under a vertical haze and at the afternoon hours on these two some richer violet and purplish tints gradually shading to blue and pink with yellow or orange when the last rays of the sun have gone but now the mountains shed a white crown with the white showing a blue tinge given by sunset looking downwards. When the sun came the rays in the sun are like the hair of the sun. The pale pink of the sunset and light green of the young tree and the darker shades of the glimmers of trees marked by sunlight leaves green of water and soft blue hanging in a combination of all this surrounding the stream by the hanging wire of the green. It is impossible to describe all his sense of the future to the beauty and grandeur of the mountains of Kashmir or to enumerate the forest glades and forests, sacred by us here. Much has been written of the magnificent views of the land and other values, and of the general charm of the land, but the unfamiliarity of the western side of Kashmir have hardly been described. For a visitor an offer something grander than the deep green mountains can be found, or the forest range the parts of which most a mind of nature into the valley over the hills and a great of trees which the falling grass in certain places. From Wazir's the springs down of Wazir's looking over the valley river as it flows, looking down from the mountains, the long winding path known as the Wazir's, and hence down till the little river which flows out of Wazir's and the lake with its pretty lake water for the dense forest, are worth to be seen.

As one descends the mountains and reaches the woodland

glades, cultivation encroaches unduly, and right up to the fringe of the forests many a pine and walnut-tree stands. A little lower down, at an elevation of about 7000 feet, fire of a hardy and stunted growth is found, and the shady place-trees appear. Lower still superior firs are grown, and the meadows are edged with a row. The wide valleys which lead off from the base of Kashmir through picturesque districts, the shores of their arms, have stream features in common. At the mouth of the valley into the wide delta of the main on which he lies with its varying values the plane trees, mulberries, and willows grow luxuriantly. A little higher up the land is spruced and pine and grass, and the slopes are shaded with the wild shrubs till at about 8,000 feet the place tree gives place to the walnut and fir in forests. On the left bank of the mountain river endless forests stretch from the foot of the valley to the peak, and on the right bank, wherever a bank of land is sheltered from the sun and the hot breezes of India, the pines and fir creep ash themselves. Farther up the valley, the river slowly a running current becomes a variable material dashing down between lofty hills, whose bases are fringed with maples and horn-cherstubs, where oak and pine, and willows are replaced by birch-bark and I mean birch. Soon after the upper bank tree appears, and I see taller grass and flowers, the country of the mountainside.

Deer

When the mountains come in a steep, fan-like picture with the red and sage and are of trees run the towards the valley. These are known as deer. Sometimes they stand up, ridged at the middle of the valley but whether ridged or attached to the mountains the deer presents the same sterile appearance and offers the same amount of life in the valley. The deer are not put to in mountain forests and appear with horses. Having a mind that Kashmir was once a sea, which dried up when nature advanced its outlet at Baramulla, it is easy to recognize in the deer the shivering shores of a great inland sea, and to realize that the mountains of the west, when he rises of what can be seen in the hills and in the shape of the mountains, had no other home of water up in those days, the present form takes up, turned around a wave of water.

Lake and Springs

Kashmir is surrounded by mountains with many lakes, and many springs. Of the lakes the Wular, the Dal, and the Manasbal are the most beautiful. There are many springs, many of which are famous. There are many mountains in the mountain streams, in gardens, and are sometimes the side

that the old bridges had withstood many a storm flood. Not long ago two of the bridges, the Hsiao Kadal and the Zaina Kadal had some of their arches remaining one of the London Bridge has long have now been cleared away.

Swargaris
Ling

The distance by road from Swargaris to Lajal is 218 miles, and the traveler can reach Baramulla at the head of the Jhelum lake by boat or by land. The ridge road which crosses the Kashmir range as its first summit 15,000 ft. is a terrible climb in winter and was one of the greatest hardships ever endured on the Kashmir subjects of the Mughals. It was in its construction suggests the difficulties of the Mughals were not so much by mountainous heights, many of them perished in the passes, or returned crippled and maimed by frostbite on the snow or in water on the great paths had died daily by the way. The journey to Lajal where there has been a great improvement with the journey is to be made. Now swargaris are a kind of gods and the name Lajal is no longer a terror to the people of Kashmir.

From Baramulla a steep ascent leads to the Kila Mangal pass 11,500 feet, a most dreaded place in the winter months, when the wind usually means death to man and beast. (Having through a beautiful wooded and watered valley just the lovely valley of Lajal down which the Kashmiri River, the traveler will go down to reach the Kila Mangal pass 11,500 feet high, which he must pass. The Kila Mangal is the great range of the Jhelum plain here lies all is the northward. This is a very steep pass in winter but is very dangerous in a storm of high wind.

Descending from the head of the whole series of passes. The forests and vegetation of Kashmir are left behind, the trees are few and of a strange appearance, the very flowers and fruits. It is a thick and rugged nature and when about 15,000 feet is left the snow of the mountain increases. A thing can be made down the steep descent to an hour down the side of the and Hsiao P. on the steep side of the ridge side. It is not at Lajal 6,000 feet it is still at Karamila 15,000 feet where one passes over the ridge over a suspension bridge. The old construction was a terrible bridge of eight to the Kashmiri converts who were forced from the east and left to their own devices of capture by the slave hunters from India. It is a terrible and a terrible sight to the eye but there is nothing so cheap the way as the bridge has been crossed by a fine bridge and go much further the pleasant view of Lajal is reached.

The Indus valley is a barren desolate country. The very river with its black water looks hot, and the great mountains are destitute of vegetation. The only thing of beauty is the view of the snowy ranges, and Natch Forts in the evening can be seen from the crossing of the Indus river. A light sweep into aboriginal the dreadful desert of sands and rocks. Light (4,500 feet) with a terrace and well watered. The mountains fall back from the river, and leave room for cultivation on the alluvial land bordering the right bank of the Indus river, a rare feature in the northern parts of the Madhraj's dominions.

Another route giving a general idea of the country runs from west to east from Kohala on the plains to Leh, about 100 miles beyond the Indus. A good road from Kashmir brings the traveller to Kohala, where he crosses the Indus by a bridge and enters the very heart of Ladakh and Kashmir. The cart road passes from Kohala to Srinagar a distance of 150 miles, by easy gradients. As far as Baramulla the road is close to the river but the most part of a great height above it, and the scenery is beautiful. At Muzaffargarh he crosses the Indus river, the Indus, and here the road from Kohala to Leh (about 100 miles) crosses with the Kashmir route. The road runs along the left bank of the Indus, through arid barren mountains, some of which are one forest and pasture. It carries a very heavy traffic but owing to the ruggedness of the country it is liable to frequent breakdowns, and is expensive to keep in repair.

From Leh a road runs south to the country of the Rajah of Poonch, the son, grandson of the Maharaja, crossing the Himalayas (100 feet). At Baramulla the road enters the valley of Kashmir and runs through a continuous series of peaks to Srinagar. In bygone days this route known as the Indus valley road was the best means of communication with India. The British and Kashmiri who sell from the country were a restless and warlike people, and the numerous forts that commanded the narrow valley suggest that the very neighbourhood was unsafe for the ordinary traveller. The construction of the road from Kohala to Baramulla out of the State nearly 20 years.

From Srinagar to Leh is 150 miles. The first part of the journey runs up the Indus valley, perhaps the most beautiful scenery in Kashmir. Efforts are made from time to time to improve the important route but it still remains a mere fair weather track. The road over thousands down the

valley, and the steep mountain rise on either side. The northern slopes covered with pine forest, the southern bare and barren. At Tangmarg the track climbs along the river torrent to Sonamarg 8,550 feet, the last and highest village in the Sind valley if we except the small hamlet of Nigitar about 5 miles higher up. Sonamarg is a beautiful mountain meadow surrounded by glaciers and forests. It is a picturesque place in the worst time but it is of great importance for drainage & a rich population. The last stages of the rain are got from its Tibetan border and backwash. It is good to turn from the ~~glacier~~ ponds to grass on the meadow grounds for in a few weeks ~~the~~ one passes into a region like the country beyond the Shivalik on the road in Tibet, a land devoid of forests and pastures, a desert of bare rocks and granite dust, a human region always burning or freezing under the clear blue sky. The *Lop La* 12,000 feet is the lowest depression on the great Western Himalayas which runs from the Indus valley to the Chills frontier. Over this high range the rain from the south hardly penetrates, and the cultivation, scanty and difficult depends entirely on artificial canals. The ascent to the *Lop La* from Sonamarg is very steep, the descent to the elevated table-land of Tibet almost imperceptible. For five miles the route follows the course of the Indus river through a desolate country of piled up rocks and bare gravel. A hangman (the *raja*) & *chakras* cross the high river by a cantilever bridge, a mile above the junction of the Dira and Sind rivers, and about 5 miles further on the Indus receives these waters. But the steep cliffs of the Indus ridge as pass to the right and the rock leaves the Indus river, and turns to a southern direction to Kargil, a dreadful name. Then the road abandons the valleys and ascends the bare mountains. The desert snow, is compensated by the Indian rain blue sky and the day, bracing us as *haze* *crude* of *dark*. Through gorges and defiles the valley of Shivalik is reached the first Buddhist village on the road. Thereafter he crosses a Buddhist and the road runs up and down over the *Namika La* (13,000 feet and over the *Lop La* 13,000 feet), the highest point on the *Lop* road. Along the road near the villages of Buddhist mountains *stone* walls of *praying* *stupa* and *chamras* where the ashes of the dead mixed with clay and moulded into a little idol are placed, and at *Lamara* there is a wilderness of monuments. Last, the road is crossed by a long cantilever bridge and the road runs along the right

bank through the fertile oases of Khasha, then through the snow desert with an occasional patch of vegetation to Loh (10,000 feet), the spring of Western Tibet and of Western Bhutan, and the trade terminus for caravans from India and from Central Asia. It is a long and difficult road from Loh to Yarkand, 2,500 miles, over the Karakoram, the瀚海 (Loh), and the Karakoram, and is between 15,000 and 20,000 feet altitude where the mule and yak (the pack animals) relieve the power of these loads when fresh meat has failed, or upon sudden or unexpected a path to the pasture.

A brief description of the road and other parts of the main Loh-
Kashgar (Loh) route, the river and the mountains, the
road from Loh through Kashmir to Awar on the Loh road.
The Khasha is where the caravan route runs the Indian, the
road keeps to the right bank of the Indus, and passing down
the deep gorge of the river comes to a point where the
steepness still and the running current prevent further pro-
gress. Then the caravan strikes away from the Indus and
across the mountains to the highest pass (15,000 feet),
crossed with much snow in the winter from the pass, from the
valley of the Shyok river, the great Karakoram range, some 30
miles away comes into view. An abrupt descent carries the
traveler from winter into hot summer, and by a difficult track
which is paved or gravel along the base of the cliff by foot
walling, past, in many, the course of the Shyok river,
usually flowing between 150 and 200 feet of granite and passing
many pleasant spots, we come to the gravelly garden of
Kashgar, a caravan to the north of the Indus. Crossing the several
waters of the Shyok and the Indus on a small white raft the
traveler arrives at Skardu (15,000 feet), the old capital of
Kashgar. Here the mountains on either side of the Indus
range and the sandy basin about 5 miles in breadth, is
partially irrigated by water from the pretty mountain side of
Skardu, and carries a caravan. Crossing across the Indus to
the north the Shyok valley, the garden of Kashmir with its
wealth of fruit trees is seen. From the left and adds to the
wealth of the mountain from the south of the river. From
Skardu the direct route to the Indus, which is
crossed at Khasha, by a high bridge as long as 100 feet, trying
to the river, but a far easier track over the Karakoram
leads the traveler on the Loh road at Awar.

It is difficult to give a general idea of a country as described
in Kashmir and Kashmir. As will be seen in the picture in
Kashgar, a younger country has brought people of distinct faces.

languages, and religions, and varieties of widely different physical characteristics under the rule of the Maharajah.

Mountain
and river
systems.

The Kashmir territory may be divided physically into two parts: the two eastern, comprising the area drained by the Indus with its tributaries, and the south-western including the country drained by the Jhelum with its tributaries the Kishanganga and by the head. The dividing line of watershed is formed by the great central mountain range which runs from Nanga Parbat extending to the east in the north-west, in a south-eastern direction for about 150 miles till it enters British territory in Lahul.

South
western
area.

The south-western area may be following the eastern valley of the Indus, in its turn the geographical division into three sections: the region of the upper Indus, the middle mountains, and the Kashmir Valley.

Upper Indus.

Extending eastward from the foot of the Pir Panjal, the boundary is first at the foot of the Indus, but continues a part of the great plain from 5 to 15 miles wide from 15,000 to 18,000 ft. to the Indus. As is generally the case along the foot of the Western Himalayas, the tract of flat country is narrow in area and limited valley cut up by narrow steep sides of the flanking slopes of the mountains. A low amount of cultivation is found on the plateaus between these ranges, though very sparsely distributed on the ranges, the usual is not much pastures. The height of the tract may be about 10,000 to 12,000 feet above sea-level.

Passing over the plain a region of barren ground and low hills is the low running mountain ridges parallel to the general line of the Himalayas. These are in height from 5,000 to 8,000 feet and are only a continuation of the general line of the Himalayas. Between these parallel ridges are a series of valleys or depressions, some of which are populated, on the whole, by the Indus, and on the west by Chitral. These valleys are sparsely covered with low scrub bushes, the *Salix* *fragilis* gradually predominating as the snow is approached. These are the other hills of the region of a more or less mountainous district.

The
middle
mountains.

The slope of the region as defined by the Indus has been somewhat extended in the west to the range which forms the southern boundary of the Kashmir Valley known as the middle ridge, and its continuation easterly beyond the head. This tract is about 50 miles long and varies in width from 25 to 55 miles. The country lying between the Indus and Chitral is formed by the mass of mountains more or less running

down from the high Pamir range which forms its northern limit. The Pamir itself, extending from Murghashid on the Helmand to near Kizilgorda on the Chirchik, is a massive mountain range, the highest central section of which the name is readily applied having a length of 60 miles, with peaks rising to 4,000 and 15,000 feet. From the southern side a series of spurs branch out, which break up the ground into an irregular mosaic of ridges and vales by ridges or divided by narrow valleys.

The elevation of these middle mountains is sufficient to give a thoroughly continental character to the vegetation. Forests of Himalayan oak pour surface silver to and divide a wide great part of the mountain slopes, the rest the more sunny parts, where forest trees do not flourish, is swept where they get not well covered over herbage, with plants and flowers that resemble those of Central or Southern Europe. East of the Chirchik river rises a somewhat isolated mass of hills forming the centre of Badkhash with peaks rising from 4,000 to 14,000 feet in height. These culminate in the high range which forms the Chirchik and Kizilgorda watershed in Pamir territory.

In the west portion of the south western area begins a strange ^{Kashmir} character in the Hindukush, consisting of an open valley, a ^{deep} considerable extent of which is completely surrounded by mountains. The Hindukush are formed on the north-east by the great Pamir range which separates the Helmand and its drainage and on the south by the Pamir range already described. The eastern boundary is formed by a high spur of the main range which runs off at about 75° 30' E. from the main range, its peaks reaching an elevation of from 12,000 to 14,000 feet. This spur range forms the watershed between the Helmand and Chirchik, separating the Kashmir from the Badkhash vales. It extends for 100 miles west of Kizilgorda. On the north and west the winding angles of the range are more difficult to describe. A few miles west of the spot from which the eastern boundary spur branches out to 75° 30' E. another minor range is given off. This runs nearly due west for about 60 miles at an elevation of from 12,000 to 14,000 feet with a width of from 15 to 20 miles. It forms the watershed between the Helmand on the south and its important tributary the Kushangangh on the north. The range at 75° E. the ridge gradually curves round on the south and it reaches the Helmand a short of the western end of the Pamir range. The valley has enclosed

has a length measured from ridge to ridge of about 45 miles with a width varying from 24 to 30 miles, and is drained throughout by the Indus with its various tributaries. The flat portion is much restricted, being in the space given off by the great steep ridge which runs down into the plain, forming the well-known Sind and Luddar valleys. On the northern side the space from the Hindu range project is to 26 miles above the plain.

North
western
plateau

The north-western section is comprised between the great central mountain range and the Karakoram range and its continuation on the north. It is drained by the Indus and its great tributaries, the Shival, the Zaskar the Suru, and the Gigit rivers. The chief characteristic of this region, more especially of the eastern portion, is the great altitude of the peaks and plains. The elevation of the Gigit and Indus rivers is 2,500 feet above sea level. Proceeding upstream the water further east at the confluence of the Shival and Indus the level of the river is 17,000 feet, whereas at 150 miles further up the river its height is 10,000 feet, while near the Kashmir Tibet boundary on the Karakoram district the river runs at the great height of 15,000 feet above sea level.

Between the various streams which drain the country are ranges of mountains, those in the eastern portion attaining an elevation of 10,000 to 15,000 feet, while the mighty banking regions of the Karakoram & Hindu on the great peak Ladakh Aqueduct 20,000 feet. The difference of the level in the valleys between the eastern and western parts has its nature effect on the country. In the east as in the Kapsar district of Ladakh, the lowest ground is 12,500 feet above the sea, while the surrounding run very evenly to a height of 10,000 to 15,000 feet. The result is a series of long open plains bounded by comparatively low hills having very few of the characteristics of what is generally termed a mountainous country. To the west as the plains deepen, while the bordering mountains keep at much the same elevation, the character of the country changes, and assumes the more hilly or Himalayan type, as of massive ridges and valleys rising steeply into the deep valleys between.

Central
plateau

The central chain is comprised on the west as the great mountain range rising directly above the Indus, of which the culminating peak is Nanga Parbat. From this point it runs in a north-easterly direction, forming the watershed between the Indus and the Raskarung. It gradually rises to an altitude of 14,000 to 15,000 feet at which it continues for 50 or 60 miles. It is crossed by several passes, the best known of which are

the Baral on the road from Kashgar to Chigo, and the Zuo La of 11,300 feet, over which runs the road from Yining to Urdi and Loh. From the Zuo La the mountains rapidly rise in elevation, the peaks attaining an altitude of 14,000 to 20,000 feet, culminating in the Nam Kuo pass which rises to a height of over 25,000 feet. Owing to these altitudes these mountains are under perpetual snow and glaciers form in every valley. The range keeps this character throughout Kashmir territory for a distance of 150 miles to the Mark Isha pass, where it passes into Spiti.

The Karakoram range is of a far more complicated character. Broadly speaking it is a continuous wall of the Hindu Kush and forms the watershed between the Central Asian drainage and the streams flowing into the Indian Ocean. From its broad ridge partly open eastern into Kashmir separating the various tributaries of the Indus, the range being a continuous mountain mass 200 miles long, with a width on the north side of the watershed of 50 to 60 miles, with peaks averaging from 21,000 to 25,000 feet, culminating on the west in the northern Ladakh range, north of Chigo, and 25,100 feet high, and in the mighty group of peaks round the head of the Indus glacier dominated by the so-called highest mountain in the world, Mount Everest, whose summit is 29,165 feet above the sea. The head of every valley in the north is a glacier. Many of these are of enormous size such as the Indus, the Zaskar, and Nigra glaciers, the two latter forming an unbroken stretch of ice over 50 miles long. The great mountain barrier is broken through at the point by the Hunza stream a tributary of the Indus river the watershed at the head of which has the comparatively low elevation of about 15,000 feet. The main self-sufficient part lies 100 miles to the east, where the road from Loh to Yarkand leads over the Karakoram pass at an altitude of about 18,000 feet.

A description of this mountainous region would be incomplete without a reference to the vast elevated plains of Ladakhistan, which lie at the extreme northern corner west of Kashmir territory. These plains are going down a 5,000 to the great Tibetan plateau. The ground here is from 10,000 to 15,000 feet above the sea, and such rain as falls drains into a series of salt lakes. If vegetation there is little or none, the country being a desolate expanse of earth and rock. The northern border of this plateau is formed by the Kuenlun mountains, the northern base of which slopes down into the desert of Khotan.

An account of geology will be found in the *History of Ladakh*.

Mr Richard Lydekker *The Geology of the Kashmir and Chamba Territories and the British District of Jhagun*. Mr Lydekker differs from Mr Drew also an expert in geology who held that some of the gravels at Baramulla were of glacial origin, indicating the existence of glaciers in the valley at a level of 5,000 feet but he has no doubts as to their existence on the Pir Panjal range and in the neighbourhood of the various margs or mountain meadows which surround the valley. The question of the glaciation and the evidences of relative changes of level within a geologically recent period is fully discussed for the Sind valley by H. D. Oldham in *Rivers' Geological Survey of India*, vol. xxix, part 3.

There is abundant evidence that igneous or volcanic agencies were actively at work, as is proved by the outpouring of vast quantities of volcanic rocks but these are not known to have been erupted since the Eocene period. Subterraneous thermal action is, however indicated by the prevalence of numerous hot springs. The burning fields at Sonam, of which an account is given by Lawrence, *Valley of Kashmir*, pp. 42-3, point to the same conclusion, and the frequency of earthquakes suggests subterranean instability in this area.

The following table of geological systems in descending order is given by Mr Lydekker for the whole State —

		Stratigraphic equivalent
Alluvial system		
Low-level alluvia, etc.		Proterozoic
High-level alluvia, glacial lacustrine, and lacustrine series		Flintwood.
Tertiary system		
Sivalik series	Deer fauna	Pliocene
	Mammal group Sivalik group	
Sivalik series	Indian Tertiary	Miocene Kansu
Quaternary system		
Chitwan series		Cretaceous Jura and Trias, Carboniferous
Sivalik-Kansu series		
Kansu series		
Proterozoic system		
Not generally subdivided		Sialian auriferous
Metamorphic system		
Metamorphosed Sialian, etc.		Palaeozoic and Archæozoic
Central gneiss		

Under the first of these systems, Mr Lydekker has discussed

are sometimes seen. Geese are found in vast flocks on the Wular Lake in the winter, and there are at least thirteen kinds of duck. The gooseander and mews are also found on the Wular Lake. There are six species of eagles, four of falcons, and four of owls. Kingfishers, hoopoes, bee-eaters, night jays, vireos, ruckons, woodpeckers, parrots, crows in great variety, thrushes, starlings, urdues, larks (12 species), buntings, jacks, wag-tails, creepers, jays, shrikes, warblers (14 species), thrushes (20 species), coppers, wrens, ash-throated thrushes, bulbuls, flycatchers, and swallows are all familiar birds.

Among the reptiles there are two poisonous snakes, the *Gundi* and the *Adar*, the bite of which is often fatal.

Fish forms an important item in the food of the Kashmiri. Vigne states only six different kinds, but Lawrence enumerated thirteen.

As the elevation varies from 2,000 feet at Jammu and 3,000 ^{Temples} feet in the Indian valley at Baramulla to 15,000 and 20,000 feet on the highest mountain peaks, the State presents an extraordinary variety of climatic conditions. The total variations of temperature depend chiefly upon situation (i) whether in a valley or on the crest of a mountain range, elevation, and the aspects of the water supply and the position and depth of the snow in winter. The effect of position in a valley or a mountain crest is shown by comparing the temperatures of Murree and Srinagar. The Murree observatory is about 2,000 feet higher than the Srinagar observatory. The mean maximum day temperature in January at Murree is 7° higher than at Srinagar and the mean minimum night temperature 4° higher. On the other hand, in the hottest month (June) the maximum day temperature is 2° lower at Murree than at Srinagar while the minimum night temperatures are almost identical. The diurnal range is 2° less in January 3° less in June and 14° less in October at Murree than at Srinagar. The slow movement of the air from the higher elevations into valleys results in less variation than in low mountains tends to depress temperature at various stations both by day and night considerably below that at similar elevations on the crest of the Outer Himalayas, and to increase the diurnal range most largely in the dry cold months of October and November, when the sinking down of the air from the adjacent mountains has its greatest effect, and is supplemented by rapid radiation from the ground. The effect of snow accumulating in valleys in reducing temperature is very marked. At Lard and Sotahung, where the accumulation is usually large, the

polar heat. A clear fine day in winter is utilized in melting the snow and hence exercises its influence on the air temperature. At Jhel, where the ground is only occasionally concealed under a thin covering of snow the sun even in winter usually warms the ground surface directly and thence the air. The warming influence of snow accumulation at Jhel and Baramulla is largely increased by the rapid sublimation from the surface. The mean daily temperature is lowest in January and highest in June and July. At Srinagar the mean temperature of January is 33.1°. The mean temperature of the hottest month (June) is 67.9°. The mean temperatures in January and August ranges from 33.3° to 34° at Sotkda, from 34° to 64.1° at Jhel, from 37.7° to 64.1° at Jhel, and from 38.8° to 63.4° at Jhel. The most remarkable feature of the seasonal winds is the very rapid increase in March or April at the end of the winter and an equally rapid decrease in October, when the clear sky after the southwest monsoon. The diurnal range is about 41.8° at Jhel and 38.4° at Srinagar. At the middle of the year and ground at Jhel 3.4° and 12.6° (4.5°).

Rain and Snowfall

The vegetation is retarded during two periods, the cold season from November to April and the south west monsoon period from June to September. The rainfall is light and November is small in amount, and December is small. The lowest rainfall of the year. The minimum rainfall is from December to March is chiefly due to winter which is about from Jammu and Baramulla across the northern India. The rainfall decreases considerably to very little amount in Kashmir, with a few points in the higher elevations and much snow. The fall is large on the Pir Panjal range being highest in January or February. In the valley and in mountain ranges in the north and east that is the chief precipitation of the year and is very heavy on the first line of permanent snow but decreases rapidly eastwards in the Karakoram range. The largest amount is received at Srinagar (Jhel) and Baramulla in January. In the Karakoram region and the eastern portion the winter fall is much later than on the outer ranges of the Himalayas, mainly from March to May and the maximum is received in April. The average depth of the snowfall at Srinagar in an ordinary winter is about 6 feet. The snowfall at Srinagar in 1902 measured 17 feet and in 1903 about 10 feet. In April and May thunderstorms are of occasional occurrence in the valley and surrounding hills bringing light to moderate showers of rain. This but season rainfall is of con-

siderable importance for cultivation in the valley. From June to November heavy rain falls on the Pir Panjal range, and in Jammu chiefly in the months of July, August, and September. The rainfall at Jammu and such a comparative with that of the submontane forests of the Punjab. It is more moderate in amount in the valley which receives a total of 94 inches, as compared with 317 inches at Poonah and 208 inches at Dharm. The precipitation is very light in the east of the first line of the ranges bordering the valley on the east, and is about 2 inches in total amount at Udhampur, Kathua, and Leh. Thus the south-west monsoon is the predominant feature in Jammu and Kashmir when in Ladakh, Tibet, and the higher ranges the submontane precipitation is more important. The tables on p. 42 show the average temperature and rainfall at Srinagar and Leh for a series of years ending with 1905.

Earthquakes are not uncommon, and eleven accompanied with loss of life have been recorded since the nineteenth century. In 1813 shocks were felt from the end of May till the middle of August, and about 3,500 people were killed. Houses opened in the earth, and landslides occurred. Lands are also frequently mentioned in the histories of the country, the greatest calamity the destruction of the Dargah by the fall of a mountain in A.D. 1796. The great flood of 1841 on the Indus caused much loss of life and damage to property. In 1893 very serious landslides took place in the Jhelum valley in consequence each for 48 hours, and much damage was done to Srinagar. An earthquake of a yet more serious character occurred in 1901.

The early history of Kashmir has been preserved in the celebrated *Rajatarangin*, by the poet Kalhana, who began to write in 1148. He gives a connected account of the history of the valley which may be accepted as a trustworthy record from the middle of the tenth century onwards. Kalhana's work was continued by Juyana, who brought the history through the troubled times of the last Hindu dynasties, and the first Muhammadan rulers to the time of the great Jamuna Sultan who succeeded he throne in 1420. Another Kashmiri chronicler, Nizami, carries on the narrative to the accession of Faiz Shah in 1470, and the last of the chronicles, the *Rajatarangin*, brings the record down to 1580, when the valley was conquered by Akbar.

The current legend in Kashmir relates that the valley was legends once covered by the waters of a mighty lake, on which the

goddess Parvati moved in a pleasure boat from Harimoh's mountain in the north to the Keshavnag lake in the south. In her retinue she was known as the Queen or lake of the virtuous women. The country side was harassed by a demon, popularly known as Astor, a corruption of Jastubava. Keshava, the grandson of Brahma, came to the rescue, but for some time the demon kept driving eluded him, being under the water. At last they discovered and struck the mountain of Harimoh with his trident. The waters of the lake rushed up but the demon took refuge in the low ground some where between both Harimoh and Jastubavav. Then Parvati cast a mountain on him and so destroyed the wicked fiend. The mountain is known as Harimoh's mountain, and from ever since the goddess has been worshipped on its slopes. When the demon had been routed, men raised the temple on the summit, and as the lake became a lake they continued for the water. Later long time spring up and the lake is large quarrelled among themselves, with the usual result that a bigger king was called in to rule the country.

THE
JAMMU

The Jalandhar valley opens with the name of the glorious king of Kashmir, Jalandhar, worshipped by the people who had been light up, and which the young people inherit with a soft garment. Nothing is known of the founder of the dynasty through the genealogies of Jammu. It is a direct descent from the founder of the present rule. Merit is a mark of the people, and of his name, Jalandhar, with its quality, the lake of Jammu responded with might. This town of Jammu stood in the neighbourhood of the Takh, Kaimukh, and the three kings, Kushana, Kushana, and Kushana, to be identified with the Kushana, Kushana, and Kushana, Kushana rulers of Northern India at the beginning of the Christian era. According to the chronicles, in the days of these kings Kashmir was in the possession of the Buddhists, and Buddhist tradition asserts that the third great council held by Kanishka took place in Kashmir. The Buddhist canon and the Jalandhar valley seem to have existed peacefully for a long time, but for hundred years after Merit, a long period the mass of the people Hindu and the majority of the people were destroyed. There is great reason to believe that the Kashmiris were, from the earliest period, chiefly Hindu.

White
Horse

At about A.D. 1200, Maharaja the king, ruled over Kashmir. He was the leader of the White Horse or Ephraim. The people of the valley were a race on the 12

Funj'd range Kashmir where the king to avenge himself
 drove into hundred villages over the prostrate, mowing
 their crops of agave. King Lalabada was a powerful warrior
 to the cruel king, and did much to raise the Brahmins, and to
 advance their interests.

Lalabada (1) reigned in the sixth century and, according to the
 in his numerous campaigns abroad took a magnificent city ^{Prasapura}
 on the site of the present capital of Kashmir. The city was
 known as Prasapura, and is mentioned by Hsueh Tsang at
 the close of his visit (a. d. 630) as the new city. The new
 chosen has many advantages, strategic and commercial but it
 is liable to floods. Many subsequent rulers endeavored to
 move the site of the capital but their efforts failed. Among
 these was the celebrated Kalidasa, who reigned in the middle
 of the eighth century and received an appointment from the
 emperor of India. A great and victorious warrior he subdued
 the kings of India and invaded Central Asia. After twelve
 years of successful campaigning he returned to Kashmir,
 exercised much skill and was rewarded by presents from various
 countries, and took a magnificent city Parasara (Prasapura).
 To him has been given the name of the great Indian Prince
 Kalidasa also known as Kalidasa Kalidasa of Kashmir
 before leaving his native country on Central Asia from
 which he never returns. The king gave him orders to order
 ever one thing. He warns them against martial pride and
 asks that if the forts are kept in repair and garrisoned they
 need less or less. In a country that is by themselves,
 discipline must be strict and he exhorts them not to be
 with grain more than half and for a year's requirements
 Kalidasa should not be allowed to have more ploughs or
 fields than are absolutely necessary or they will increase in
 their neighboring fields. They should be recruited and their
 style of dress must be lower than that of the city people or
 the latter will suffer. These words spoken some five years
 ago have never been forgotten and rulers of various times
 and religions have taken of Kalidasa's words and have
 strictly substantiated the interests of the subjects to the
 benefit of the state.

Sinhara Varman (81-92) was another great conqueror
 and it is stated that, though Kashmir had fallen off in power
 under him, he was able to win an army of 50,000 men
 from the Indians, and 50,000 from the Sinhara Varman was
 victorious and powerful. He plundered Parasara in order
 to have the name of his own city now known as Jammu.

There is
no
evidence

There were signs of decay and the last of the strong Hindu rulers was Jaisi Datta (c. 1050-1080). Then followed the Lohara dynasty. Central as well as weakened, the country was a prey to civil war and violence, and the Parmars, skilled in burning, plundering, and fighting, harassed the valley. The last of this line was Jaisi Datta, or Jaisi Datta (c. 1150) and in his reign the Parth K. de Lakha, invaded Kashmir and after great slaughter set fire to Srinagar. He subsequently perished in the plains on his return from Kashmir overtaken by snow. K. de Lakha, the commander-in-chief of the Kashmir army had meanwhile kept up some work-shops of authority in the valley and had resisted the Ladakhs from Kashmir. With K. de Lakha were two leaders of Karmas, Mahachan Datta from Jaisi and Mahi Datta from Jaisi.

Progress of
the
king

Kashmir was conquered with K. de Lakha and with the assistance of the Ladakhs attached and killed him. He married Kati Kati, the daughter of K. de Lakha, and on his death his son became the first Mahomedan king of Kashmir. His reign was a short reign of two and a half years. At the present day, however, appeared, who was the brother of Kati Kati, who had fled to Kashmir. He married the widow, Kati Kati, and reigned for fifteen years. On his death his son assumed power for a short time and then the son of his brother, who was the first of the line known as Shamsi Kashmir and took the name of Shamsi Datta. In 1190 he was Shamsi Datta known for his force and as a ruler of Kashmir. He was a strong ruler and destroyed nearly all the great buildings and temples of his Hindu predecessors. To the people he offered death conversion as a reward. Many died many were converted to Islam many were killed and many had their heads broken even masters of sacred threads worn by the converted Brahmins. By the end of his reign all Hindu religious of the valley, except the Brahmins, had probably adopted Islam.

Mohammed
was
a
ruler.

In 1200 Zain-ul-Abidin succeeded. He was wise, virtuous, and brave, and very tolerant to the Brahmins. He required the police on Hindus, encouraged the Brahmins to learn Persian, repaired some of his Hindu temples, and revived Hindu learning. Mahomed in Kashmir Sanchari had been written in Sanskrit, an older name of the Theravada character. The introduction of Persian as the official language divided the Brahmins into three subdivisions: the Karmas, who

Although the Sikh came on a relief to the unfortunate Kashmiris, their rule was harsh and oppressive.

Shah Singh, the reposed son of Hari Singh, was a weak governor and his name is remembered in connection with the terrible famine which visited the valley. The best of the Sikh governors was Colonel M. M. Singh (1851), who is still spoken of with gratitude, and for his use to regulate the ranges of the hill-people. He was over-ruled by mountain soldiers, and was succeeded by Shah Gulab Singh, who died in 1862. During his government the hill-people under Sher Shama suffered great losses on the hills. In 1863 Jassu Singh succeeded his father as governor.

The history of the State, as at present constituted, is practically the history of our times, a Dogra Rajput, Gulab Singh of Jammu. Among all the highlands of India, and away from the fertile plains of the Punjab, the barren hills of the Jammu hills had attracted the interest of the Moghul invaders of India. There lived a number of small Rajas, so it appears that even very early times the little kingdom of Jammu was known of some importance. Towards the end of the eighteenth century the power of the Jammu ruler had extended east as far as the Ravi and west to the Cheshma, but the power waned and waned according to the fortunes of petty and heavier warfare. To the east of Jammu and Kashmir were independent Rajput chiefs, while to the north-west were the hill-people, the rulers of Bhambhat and Kishtwar, descendants of Hindu Rajputs. These (as far as lay on the Moghul route to Kashmir and its ramp) under the influence of the Moghul Empire the hill-people were ruled by small independent Muhammadan chiefs, whose title of Raja Singh is their Hindu origin.

About the middle of the eighteenth century Raja Ranjit Singh was the ruler of Jammu. He was a man of war, war was his capital occupation. But as his death drew nigh he gave some paper and the Sikh were divided, and Jammu was plundered. From Ranjit Singh's death to 1846 the Dogra country or some tributary to the Sikh power, Gulab Singh, Dhillon Singh, and Natch Singh were the great champions of Sikh Singh, youngest brother of Ranjit Singh. They were soldiers of fortune and as such were sought service at the court of Ranjit Singh of Lahore. They eagerly distinguished themselves, and Dhillon Singh for his services in capturing the Raj of Kashmir, who was then the Sikh, was made a Raja of Jammu in 1820. Dhillon Singh obtained the conquest of Pothohar, a busy country between the Jhelum and the Be-

The
The
The
The

Jammu

Punjab range north of Rajpoot while Sachet Singh received Rannagar west of north of Jammu.

Ranjit Singh had found that the control of the Hydr country was a difficult task, and his power of rendering the services of able Hydris was at once obvious and proved. The country was divided, each man plundered his neighbor and Gulab Singh's energies were tried to the utmost in restoring order. He was a man of unrelenting power, and very quickly asserted his authority. His methods were often cruel and overbearing, but allowances must be made. He believed in object lessons, and his penal system was at any rate successful in ruling the waves of crime. He kept a sharp eye on his officials and a close hand on his revenues. Rapidly shortening the power and possessions of the tribal chiefs around him, after ten years of laborious and constant effort, he and his two brothers became masters of nearly all the country between Kashmir and the Punjab, save Rajpoot. Bhadarwah fell easily into the hands of Gulab Singh after a slight resistance. In K. Shree the Mountain War (1814) Gulab Singh ruled with the Rajah and sought the assistance of Gulab Singh who at once moved up with a force, and the Rajah surrendered his country without fighting.

His many successes at Kashmir which commanded the ^{passages} of the trade into Ladakh probably suggested the acquisition of Ladakh. The idea of the conquest of this unknown land. The influence of or was offered by Europeans and given very considerable but his brave Hydris were Gulab Singh's able friend. Singh never hesitated and in his campaign the whole of Ladakh passed into the hands of the Jammu State. It is interesting to note that the Hydris did not pillage the rich monastery of Himeas, which saved itself by allowing the army on agreement of its territory to pass the goods leading to the Himeas valley and by then sending a deputation with an offer of five garsons who in Ladakh territory. The agreement made was approved by both parties.

A few years later in 1820 Gulab Singh invaded Bhutan, captured the Rajah of Bhutan who had sided with the Larabhis, and possessed his country. The following year (1821) Gulab Singh while attacking Tibet was overtaken by winter and was attacked when his men were disabled he was perished with nearly all his army. Whether it was poison or whether it was accident by 1820 Gulab Singh had reached Kashmir.

In the winter of 1821 war broke out between the British and the Sikhs. Gulab Singh continued to hold himself aloof in Kashmir.

at the battle of Jhelum in 1813, when he appeared as a useful mediator and the trusted adviser of Sir Henry Lawrence. Two treaties were concluded. By the first the State of Lahore handed over to the British, in compensation for the cession of Sindistan, the full suzerainty between the rivers Ravi and the Indus. By the second the British made over to Gulab Singh for 75 lakhs of the Rupee an extraordinary cession of land to the east of the Indus and west of the Ravi. Kashmir did not, however, come into the Maharaja's hands without fighting. In 1819 and 1820 the Sikh government aided by the British kept him from the Indian side. Several Sikh battalions fought on the outskirts of Srinagar during Wazir's expedition. During, however, on the mediation of Sir Henry Lawrence, Dargah-ud-din deserted from the Sikhs and Kashmir passed without further discussion to the new ruler. At Anand and Gilgit the Dogra troops received the Sikhs, Nathu Singh, the Sikh commander, taking refuge under Gulab Singh. A short while after the British Raj crushed Guler territory. Gulab Singh returned by leading a force to attack the Hunan valley. He and his force were defeated and Gulab Singh fell into the hands of the Hunan Raj along with Pannu, Jamb, and Lhal. The Maharaja sent the wounded men from Anand and now from Balamir, and after some fighting Gulab Singh was recovered. In 1822, partly by strategy partly by treachery, the Dogra troops were annihilated by the Sikh army and Kashmir of India, and for eight years the Indian frontier the boundary of the Maharaja's territories.

Wazir
Singh.

Gulab Singh died in 1827, and when his successor Ranjit Singh had recovered from the shock caused by the Mutiny in which he had been engaged with the British he determined to recover Jhelum, and to rehabilitate the reputation of the Dogra on the frontier. In 1830 a force under Ran Singh crossed the Indus, and advanced on Jamb. Ranbir's strong fort at Jamb. (Jamb Balamir had died just before the arrival of the Dogra). The fort was taken and with them the Maharaja of Jammu and Kashmir have yielded, to their heavy cost, an otherwise doubtful advantage.

Ranjit Singh was a model Hindu devoted to his religion and in outward learning but tolerant to other gods. He was in many ways an enlightened man, but he lacked his father's strong will and determination, and his control over the State affairs was weak. The latter part of his life was darkened by the domestic intrigue of Kashmir 1827-9, and in September 1839, he was succeeded by his eldest son, the present Maharaja

small detached wing on each side of the entrance the whole standing on a large quadrangle surrounded by a colonnade of eight, four square with intervening octagonal, pedestals. The length of the outer side of the wall, which is built, is about 90 yards, that of the roof is about 80 yds. The central hall was 15 by 15 in length by 30 feet in width and some of all the temples of Kashmir preserve in addition to the cell a sanctum a clear and have termed in Sanskrit the *antarala* and *ardhamandapa* the nave is 10 feet square. The sanctuary above is 15 feet square, the two other square rooms being used with 15 ft. passages and sculptured niches. As the main building is so perfect scarcely measured, the original form of the roof can be determined only by a reference to other temples and to the general form and height of the various parts of the Maratli temple itself. It has been conjectured that the roof was pyramidal and that the four great chambers and wings were similarly covered. There would then have been four distinct pyramids, of which the one the most chamber would have been the tallest, the height of its pyramidal above the ground being about 24 feet.

The western most have been as imposing as the others. On ascending the flight of steps, now covered by ruins, the visitor entered a highly decorated chamber with a doorway on each side covered by a pediment, with a broken headed niche containing a bust of a Hindu god and on the flanks of the main entrance as well as on that of the side doorways, were granite and brick niches, each of which held a statue of a Hindu deity. The interior dimensions of the roof can only be determined approximately so there do not appear to be any ornamented stones that could with certainty be assigned to it. James Fergusson doubts that Maratli ever had a roof but as the ends of the temple are well marking, the numerous heaps of large stones that are scattered about on all sides suggest the idea that these belonged to the roof. Fergusson, however, thought that the roof was of wood.

Payah.

Payah lies about 15 miles from Srinagar under the Kailash temple about 6 miles from the left bank of the Jhelum river (on the north side of the bridge station) in a small green space just by bank of the stream surrounded by a few walnut and willow trees, stands an old and simple but in artistic beauty and elegance of outline is superior to all the existing remains in Kashmir of similar dimensions. Its excellent preservation may probably be explained by its being so situated at the foot of the high Salicard, which separates it by an interval of

enumerated there in 1901 compared with 111,315 in 1881. Statistics of age are, on many, unreliable, and need not be referred to in detail. In the whole State there are 884 females to 1,000 males, the proportion being highest in the frontier tracts, 900, and lowest in Kashmir province (856). These results point to defective enumeration of females. Marriage is approximately 1200 and less than 1 per cent of the males under thirty years, and about 1 per cent of the females of the same age are married. Taking both sexes together, 1 per cent of males and 39 per cent of females are married. Polygamy is prevalent in Ladakh. About 34 per cent of the population speak Kashmiri, and 19 per cent Shina, while Pothohi is the tongue of nearly 30 per cent. A great variety of languages are used in various parts of the State, by such persons of small numbers. Agriculture occupies 34 per cent of the total, and rearing animals and birds 2 per cent.

Kashmir

The total population amounts to 34,404. Muhammadans, 68,201; Hindus 25,218; Sikhs, and 31,047 Buddhist. The Hindus are found chiefly in the frontier province where they form rather less than half the total. In the Kashmir province they represented only 300 in every 10,000 of population, and in the frontier mountain of Ladakh and Baltistan only 97 out of every 10,000 persons.

Castes Jammu

Among the Hindus of the Jammu territory, who number 68,201, the most important are the Bhatiyas. At present, the Bhatiyas are the Khatris, Ghoras, and the Thakats (17,000). Each caste is subdivided into many sub-castes, and for some purposes the eight Bhatias do not regard the three divisions of the ethnologue, but draw a broad distinction between the Main Bhatias who engage in neither trade nor agriculture, and the other two groups who have all descended to work for their living. The Main will marry the daughters of the latter two, but will not give her own daughters in marriage to them. They have territorial names, such as Jamwal and Jambh, signifying that the family is connected with Jammu and Jambh. They mostly hold lands on proprietary basis, cultivated by others, who take a share of the crops. The Main himself gives service as a soldier by choice in the native and if there is not room for him in the Bhatias' forces, he will enlist in the British army. In the Hunza Nagar campaign and at Chitral, the eight Bhatias were a mainstay of the Government. As a soldier he is admired, but as a landowner even less so in the State for him. The agriculture of the eight Bhatias is not

his family inheritance in their acceptance of Islam. Both Hindus and Muslims claim a high origin, namely to the south of Shivalik hills at a place on the Kulu (the hills to the westward of Delhi). Like the Dogra Rajputs, the Chaks took upon service as the war career for a man, but both Hindus and Muslims till the end. They are a fighting people, and the spirit of adventure takes them out of their own country. They follow the same rules of the Hindu Rajputs, but are perhaps stronger and more muscular than the Hindus to the east. Besides the Chaks, there are Muslim Rajputs to the west of the Jhelum, the Jarais, the Bhons, considerably known in Afghan, the Chakras, and many others. It should be noted that the Hindu Chaks give their daughters in marriage to the ruling family of Jammu and Kashmir.

The Dogra
and
Kashmiri

There is no such Jammu and Kashmiri proverb, suggests that the Ramdas and Bhambdas of the Indian empire might be classed under the head Chakras. Very little is known as to when these people migrated into Kashmir and into India, or whence they came, but it is generally admitted that they had a foreign origin. It is probable that the Chakras have occupied the country on the left bank of the Jhelum for centuries or more, and that the Ramdas, who live on the right bank of the river came in yet earlier. The Chakras, who enjoy the great title of Raja, are like the Chaks, Musalmans Rajputs, and trace their descent to Raja Mal Rathor. They regard themselves as belonging to the Jammu tribe. The Ramdas, who are styled *Wardas*, declare a Hindu origin. They claim to belong to the Kuruksha tribe, and say that the name Ramda is a corruption of Raja Hakra, and that they are descended from Ali the uncle in-law of Muhammad. The Chakras and Ramdas have a privileged status in the province and their power has varied according to the weakness or strength of the central authority. Under the Afghans, the Chakras and Ramdas paid little to their overlord, and were practically independent. The Sikhs regarded them only as the *tribe* of the valley but the Chakras and Ramdas retained certain privileges.

The C.B.
and

Numerically the C.B.s are of some importance both in Jammu, where they number 151,700, and in Kashmir where they are numbered at 10,420. Some of them have settled down to agriculture, but the great majority are herdsmen, and in the summer months move up to the splendid grazing grounds above the forests with their buffaloes and goats. They are Musalmans by religion, and many of the *tribe* tribes speak

a dialect of their own known as *Parnu*. They are a fine tall race of men, with rather stumpy faces and large prominent teeth. They sacrifice every consideration for their passions, and even in their education, chiefly make their firm thought is for their amusements. They are generous, indifferent, and simple, and their good faith is proverbial. Kashmir and its mountains have several attractions for the foreigner, but as forest conservancy expands, these born enemies of the forest will find Kashmir less attractive.

Another pastoral semi-nomadic people are the *Caldis* (چالدى, The *Caldis*, of Kashmir). They graze large flocks of sheep and goats, moving up the mountains as the summer draws on, and returning to the low country when the first snow falls. Their homes are in the high pastures, but there are few tents; part of the year being through in some places there are regular settled villages of houses. They are Hindus. They wear duffel clothes and a very peculiar hat of wolf skin. All speak well of the *Caldis*, and they are a popular people, welcome everywhere.

In the Kashmir province, out of a total population of Kashmir
1,117,104, Muhammadans number 1,011,766, Hindus 60,489
and Sikhs 12,611. The *Caldis*, however, were taken in the census when many of the resident population were away working in the Punjab.

The Kashmiris are charged as spies of the tyrannical Moghul The Kash
the brutal Afghans, and the holy high. Warriors and warriors came and went, but there was no system, and no wish on the part of the Kashmiris to submit, men to leave their homes. The outside world was far and from all grounds inferior to the pleasant valley, and at each of the gates of the valley were soldiers who demanded fees. So the Kashmiris lived their life retired into concealed, clever and conservative.

Islam came in on a rising wave, on which rode a fanatical king and a missionary mind, and before we are that the Kashmiris became Muslims. But their ancestors of the country see that the so-called Muslims are of a Hindu at heart. Their shrines are on the exact spots where the old Hindu shrines were, and their service on altars which is not restricted to the usual worship and the usual rituals. The Kashmiris do not look to Mecca, and religious men from Arabia have spoken in strong terms of the apostasy of these so-called Muslims. There are many shrewd shrews of the Rishi, the Rishi, and the Mahatma, and the Rishi, known as the *Wise*, is natural as distinguished from the *Sa* side and *Wise* *Wise* who are foreigners. And as a result,

On normal evolution there has been little change up in recent times in the people of Kashmir. Fossil-stories abound in the *Aravindrajagat* and mark the national character. We do not find any money and diamonds but in they were in the times of the old rulers.

The distinctions of Kshatriya may be divided into five divisions—Shudra, Naisika, Magadha, and Panchala. The Shudra who are in the main marmotons are the descendents of Hiranyak, but have retained some of the caste rules of their forefathers. They have their names known as from the name of the land from which they came. A girl of the name from the name of a nation, of some other descent, provided she be one of the agricultural caste. The only law drawn is that a man of the Shudra descent may not marry a beautiful girl nor must he descend himself by an alliance with the daughter of a noble's garden or a minister. Some hold that the Shudra known as—under the name of the Shudra, and that the Magadha, Panchala, Magadha, Kshatriya, Shudra, and Naisika are sprung from a Kshatriya origin. The land from is assigned a family descent and the Shudra are connected with Shudra. They may be some founded in the three Shudra. But the Shudra are in a nation, and Shudra is increasing owing to the fashion of the lower caste who arrogate the Shudra of the respectable families. Thus the Shudra, the gardeners, and the teachers have begun to call themselves Shudra, much to the annoyance of the true Shudra. And, as Shudra, a most despicable character have appropriated the Shudra name of the Shudra. The Shudra system is very plain and frequently and a very little one is much despicable a kind of Shudra.

The A. S. S. may be divided into three sections by profession of religion and those who have taken to agriculture and other pursuits. In appearance, manners, and language there is nothing to distinguish them from other Kashmiri Muslims. Their dress varies a bit. While a boy still retains his native perfume, he is a proof of he has taken to agriculture. He is an A. S. in his name. The sects Mader fraternally are faithful to their old ground. The A. S. is and remains a true K. A. and is, having the faith. Many have now taken to trade. Their occupations among themselves are

English. The Shughams are not numerous. I met them between the Mt. 12,000 ft. of Morni. Bay. South West and Ashgar

Pathway - The larvae are more numerous than the pupae and are found mostly on the south-west of the valley where pathway

columns have from time to time been founded. The most interesting of these columns is that of the *Kakhi Afridi* at *Drangshahata*, who retain all the old customs and speak *Pashto*. They wear a picturesque dress, and carry swords and shields. They make themselves on their bravery and in the absence of the *Malik* for engage the *haz* on foot with the sword or spear, but from their great little powers. The *Afridis* and the *Machwans* who belong to the *Kandari* tribe are made to military service as reward for which they hold certain villages free of revenue. The *Pachis* chiefly came in under the *Chardars*, but many were bought by *Malik* and kept high for service on the frontier. They are rapid, adopting *Kashmiri* habits.

Several villages are held by *faqirs* or professional beggars, *Muggis*. They work as agriculturists in the summer and beg in the winter. They are proud of their profession and are liked by the people. They fraternize with other beggar families in *Shikharah*. These various tribes are scattered throughout over the valley and possess a marked distinctive language.

The dividing line in society is between the *landowners* of agricultural families and the *landless*, that is the market gardeners, herdsman, shopkeepers, business, musicians, artists, workers, and the *domestic* servants of the *Landowners*. No *landowner* would fraternize with a *landless*. For the most part it is difficult to trace any difference in physiognomy between the two, save that there is often a difference in dress. But the *Thugs*, by a custom and the *Blind* or *Wala* are easy to distinguish from other tribes. They have a darker skin and the nose has the regular, tortoise eye to characteristic of the *Thug*.

The *Thugs* are a very important people in *Kashmir*, for they have the watchmen of the villages and towns used to look after the state share of the crops. As a private citizen the *Thug* is not an air in a person and he has no regard of getting by the village, by whom he is fed and dressed. But as officials they are trustworthy and have secret ways known to them the State treasure which passes through their hands. The *Thugs* claim descent from a Hindu king who from fear of his numerous sons scattered them over the valley but some say that they are descendants of the *Chakhs*, mentioned under *History*.

The *Landowners* or *housekeepers* are also credited with a descent from the *Chakhs*, and their various customs character may be traced to. Originally they earned their living by

grazing ponies, but found it more lucrative to steal them. At last they became an established criminal trade and during such raids were a terror to the country. *Minara Ismailia*, the hero of many a legend, was killed by the Sikh governor *Mian Singh*. *Calib Singh* hunted down the wretches and there was transportation to *Bunna*.

Bhatia. The *Bhatia* or *Wallas* have been called the *gypsies of Kashmir* and are a peculiar people with a pocket of their own. They may be divided into two classes. Those who plough from morning till noon and are admitted to the mosque as if to be Mussulman religion from the first time—those who eat the flesh of dead animals and are excluded from the mosque from the second. They are wanderers, and though they sometimes settle in walled huts on the outskirts of a village they soon move on. Their chief occupation is the manufacture of leather. The first class make shoes and saddles—the second class make wimming bags of leather and skin and also the wanderer's work. They also sell poultry and cut hair etc. Their women are of fine stature and handsome and they often drift into the city where they become singers and dancers. Once a year the *Bhatia* from all parts of the valley flock to *Jabal Bala* above near the *Ind Lake*, and many matters affecting the tribe are then settled.

Bhandi. The *Bhandi* or *musicians* are a peculiar people. They combine the profession of singing and acting with that of begging and they have great powers, when visiting the *Haris* where they perform to *Kashmiri* audiences. They are excellent actors, clever at improvisation and listen as to its results. They are a very pleasant people, and their mirth and good humour form a pleasant contrast to the chronic gloom of the *Kashmiri* peasant.

Hind. The *Hind* or *houseman* claims a *Watan* origin and even goes when blaming one of the crew for his bad judging the *Aslam* to say "You are a *Wadri*. They always claim birth as *Wadri* or *Wadri* but some accounts prove to a *Wadri* origin. The father of his family is an *Aslam*, and in describing his house is often of a warm character. There are many pretenses of the tribe. First rank the *Wadri* or *Wadri* of the *Ind Lake*. *Hind* *Hind*, who are really vegetable gardeners, and the *Wadri* of the *Wadri Lake*, who gather the *Wadri* but not the *Wadri*. Next in rank come the men of the large *Wadri* known as *Wadri* and over in which caravans of *Wadri* animals of grain and wool are carried. Then the *Wadri* who provide the passenger boats, and a respectable class, for

they prostitute their females, even the *Said Hina*, who not fish, and are said to surpass even the *Tunga Hina* in their power of abstinence, and last the *Hak Hina*, who collect drift wood in the rivers. The *Hina* or *Hinga* are a hardy muscular people, but are quarrelsome and undisciplined. Half the women in the districts of *Kashura* and its tributaries are due to the fertile usage taken of the *Hina*, who often the mother of the first child yet kills travellers' guests' husbands of the valley and its rulers. The *Hina* culture is a great terror and European travellers would be wise to leave him on his legs. The chief tribe names of the *Hinga* are *Hingar*, *Lur* and *Mai*.

The common vocations of the villages are carrying of things, blacksmiths, potters, weavers, butchers, washermen, barbers, bakers, makers, guatemals, carriers, carpenters, doctors, milk men, cotton-pressers, and small makers. Many of the *Hingar* have taken to agriculture, and many of them are extremely independent of these so-called masters. The only class of persons who apparently cannot take to agriculture are the *Hinga*. Their *Hin* hands and weak knees make field work an impossibility.

The *Hinga* are with few exceptions Brahmins, and are commonly known as *Pandits*. They are now divided into *astrotogers*, *freelance*, priests (born of *Shashahar*), *workers* and clerks (*Shashahar*). The priest caste do not intermarry with the others, but the *freelance* and *Shashahar* classes intermarry.

The *astrotogers* are learned in the *shastri* and expound them, and they draw up the *shastri* in which prophecies are made as to the events of the coming year. The priests perform the rites and ceremonies of the Hindu religion. But the vast majority of the Brahmins belong to the *Shashahar* class. Formerly they obtained employment from the State but recently they have taken to business, and some work as cooks, bakers, confectioners, and makers. The only occupations for holders of a *Pandit* are those of the soldier, judge, courtier, poet, husband, carpenter, mason, and landowner. Many *Pandits* have taken to agriculture, but the city Brahmins look down on any profession save that of writing, and few would ever think of marrying a daughter to a *Pandit* who is not a *Shashahar*. They have no real sympathy for business, or they might have found great openings in trade in *Benigar* under the new regime. They live in the city and if their objects of duty were outside they leave their wives and families behind them. There are a handsome race of men with fine well-cut features, small hands and feet, and graceful figures. Their manners are

Bhānda or Bhagata, already referred to. Sometimes we find in the villages a wandering minstrel *Shāri*, who sings to the accompaniment of a guitar or recites verses, often extemporaneous, on local allusions and usually full of flattery. If an official or person of influence be present. Like most Orientals, the Kashmiris regard amusement as passive rather than active. They are glad to look on as a spectator at a game, but it is extremely difficult to induce them athletic and, even further, to take a part in any sport. They are not altogether so idle. In former days justice was at a distance and small merry would have been shown to the end who suggested that life should not be all labour. Even in the present day at Srinagar the idleness of youth was checked by Gulab Singh, who sternly repressed the idle ward fights with staves and stones. The professional *shikaris* are often keen sportsmen, and the boatmen of Kashmir will, when challenged, paddle till they drop upon their be beaten by a faster crew.

As a rule, certainly, the Province presents a series of a series of ranges of low land bordering on the North Indian plains, ¹⁰⁰⁰ ²⁰⁰⁰ ³⁰⁰⁰ ⁴⁰⁰⁰ ⁵⁰⁰⁰ ⁶⁰⁰⁰ ⁷⁰⁰⁰ ⁸⁰⁰⁰ ⁹⁰⁰⁰ ¹⁰⁰⁰⁰ ¹¹⁰⁰⁰ ¹²⁰⁰⁰ ¹³⁰⁰⁰ ¹⁴⁰⁰⁰ ¹⁵⁰⁰⁰ ¹⁶⁰⁰⁰ ¹⁷⁰⁰⁰ ¹⁸⁰⁰⁰ ¹⁹⁰⁰⁰ ²⁰⁰⁰⁰ ²¹⁰⁰⁰ ²²⁰⁰⁰ ²³⁰⁰⁰ ²⁴⁰⁰⁰ ²⁵⁰⁰⁰ ²⁶⁰⁰⁰ ²⁷⁰⁰⁰ ²⁸⁰⁰⁰ ²⁹⁰⁰⁰ ³⁰⁰⁰⁰ ³¹⁰⁰⁰ ³²⁰⁰⁰ ³³⁰⁰⁰ ³⁴⁰⁰⁰ ³⁵⁰⁰⁰ ³⁶⁰⁰⁰ ³⁷⁰⁰⁰ ³⁸⁰⁰⁰ ³⁹⁰⁰⁰ ⁴⁰⁰⁰⁰ ⁴¹⁰⁰⁰ ⁴²⁰⁰⁰ ⁴³⁰⁰⁰ ⁴⁴⁰⁰⁰ ⁴⁵⁰⁰⁰ ⁴⁶⁰⁰⁰ ⁴⁷⁰⁰⁰ ⁴⁸⁰⁰⁰ ⁴⁹⁰⁰⁰ ⁵⁰⁰⁰⁰ ⁵¹⁰⁰⁰ ⁵²⁰⁰⁰ ⁵³⁰⁰⁰ ⁵⁴⁰⁰⁰ ⁵⁵⁰⁰⁰ ⁵⁶⁰⁰⁰ ⁵⁷⁰⁰⁰ ⁵⁸⁰⁰⁰ ⁵⁹⁰⁰⁰ ⁶⁰⁰⁰⁰ ⁶¹⁰⁰⁰ ⁶²⁰⁰⁰ ⁶³⁰⁰⁰ ⁶⁴⁰⁰⁰ ⁶⁵⁰⁰⁰ ⁶⁶⁰⁰⁰ ⁶⁷⁰⁰⁰ ⁶⁸⁰⁰⁰ ⁶⁹⁰⁰⁰ ⁷⁰⁰⁰⁰ ⁷¹⁰⁰⁰ ⁷²⁰⁰⁰ ⁷³⁰⁰⁰ ⁷⁴⁰⁰⁰ ⁷⁵⁰⁰⁰ ⁷⁶⁰⁰⁰ ⁷⁷⁰⁰⁰ ⁷⁸⁰⁰⁰ ⁷⁹⁰⁰⁰ ⁸⁰⁰⁰⁰ ⁸¹⁰⁰⁰ ⁸²⁰⁰⁰ ⁸³⁰⁰⁰ ⁸⁴⁰⁰⁰ ⁸⁵⁰⁰⁰ ⁸⁶⁰⁰⁰ ⁸⁷⁰⁰⁰ ⁸⁸⁰⁰⁰ ⁸⁹⁰⁰⁰ ⁹⁰⁰⁰⁰ ⁹¹⁰⁰⁰ ⁹²⁰⁰⁰ ⁹³⁰⁰⁰ ⁹⁴⁰⁰⁰ ⁹⁵⁰⁰⁰ ⁹⁶⁰⁰⁰ ⁹⁷⁰⁰⁰ ⁹⁸⁰⁰⁰ ⁹⁹⁰⁰⁰ ¹⁰⁰⁰⁰⁰ ¹⁰¹⁰⁰⁰ ¹⁰²⁰⁰⁰ ¹⁰³⁰⁰⁰ ¹⁰⁴⁰⁰⁰ ¹⁰⁵⁰⁰⁰ ¹⁰⁶⁰⁰⁰ ¹⁰⁷⁰⁰⁰ ¹⁰⁸⁰⁰⁰ ¹⁰⁹⁰⁰⁰ ¹¹⁰⁰⁰⁰ ¹¹¹⁰⁰⁰ ¹¹²⁰⁰⁰ ¹¹³⁰⁰⁰ ¹¹⁴⁰⁰⁰ ¹¹⁵⁰⁰⁰ ¹¹⁶⁰⁰⁰ ¹¹⁷⁰⁰⁰ ¹¹⁸⁰⁰⁰ ¹¹⁹⁰⁰⁰ ¹²⁰⁰⁰⁰ ¹²¹⁰⁰⁰ ¹²²⁰⁰⁰ ¹²³⁰⁰⁰ ¹²⁴⁰⁰⁰ ¹²⁵⁰⁰⁰ ¹²⁶⁰⁰⁰ ¹²⁷⁰⁰⁰ ¹²⁸⁰⁰⁰ ¹²⁹⁰⁰⁰ ¹³⁰⁰⁰⁰ ¹³¹⁰⁰⁰ ¹³²⁰⁰⁰ ¹³³⁰⁰⁰ ¹³⁴⁰⁰⁰ ¹³⁵⁰⁰⁰ ¹³⁶⁰⁰⁰ ¹³⁷⁰⁰⁰ ¹³⁸⁰⁰⁰ ¹³⁹⁰⁰⁰ ¹⁴⁰⁰⁰⁰ 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roaring torrents for a few hours after heavy rainfall but at other times are broad stretches of burning sand. This fact depends for a full crop on timely and well distributed rainfall.

The parched desert hills are composed of a red loam, the dry stream with rounded stones and covered with stunted growth of *ferula neriensis* and *leisholzer* bushes, broad leaved species of oaks, acacias, and in parts bamboo. The *ferula* is used to hedge the fields and outside paved paths, and to keep the wind from damaging the crops. The soil is light and dries quickly as the low slopes and drainage is rapid. Frequent rainfall is necessary to ripen the crops, mainly wheat, barley, and sorghum (sorgho), in the spring, and under such rains a manured land in the autumn but rain washes away the soft earth and leaves the surface of the soil a mass of stones.

Where the desert hills end, and before the first limestone range is crossed, there is a narrow belt of land here lying in the valleys traversed by the clean streams which carry the drainage of the mountain hills on the lower side. When the depth of soil is sufficient, excellent crops are raised and much of the land is irrigated but on the slopes where the depth of earth is small, and the limestone crops up to the surface (gravel), cultivation is precarious. Too much rain causes the soil to become waterlogged, as percolation is stopped by the rock bed and during a consecutive series of hot weather the rock surface becomes so heated as to burn the roots of the crops, which wither.

In his portion of the province wells are few owing to their cost. Except in the hillyed bordering on the streams deep boring is necessary and it is common to find that the water is from 70 to 100 feet below the surface. The cultivators are not as a rule sufficiently well-to-do to undertake the expenditure necessary to sink such wells, and risk the failure of finding water. Since the introduction of the regular irrigation, the British has done much to encourage the sinking of wells by the grant of advances on easy terms.

In the tract, however, are found the only considerable areas protected by irrigation. The natural difficulties to be overcome are great, as the arid of the land makes projects costly and difficult to execute. The lines of irrigation have to cross the drainage of the country, and it is not easy to secure the channels against damage from the floods when in flood. Owing to this difficulty, the most ambitious projects of former days the Kashmir canal taking off from the Jhelum above the

Mithraon near the Shikri Nahr taking off from the left bank of the Chenab opposite Akhaur, and the Kutchahri or Dalpa Nahr taking off from the Chenab on the right bank. Failed to render permanent help to the country. Something has recently been done to remedy the apathy displayed in the past. Two old irrigation works taking off from the Indus in the Jamina taluk, the old Dardela canal irrigating the lands immediately below Jamina city, and the Sarwan canal irrigating the villages around Sarwan cantonment, have been redesigned and put in order, and, the Dalpa canal, taking off from the right bank of the Chenab and irrigating a large portion of the Akhaur taluk lying immediately north of the Bhayrath Andar has been reconstructed.

Under agreement with the Government of the Punjab the right of the State to take water from the Ravi, above the Bhayrath weir, for the irrigation of spring crops in the Bathua taluk has been surrendered in consideration of an annual payment of Rs. 5,000. The restoration of the old Kashmiri canal, which takes off above the weir is thus not financially attractive. Probably the low-lying portion of the Mithraon taluk, between the Bhayrath Andar, could be irrigated from the Jhelum, but the source of irrigation has not been tapped.

There are many drawbacks to agriculture. The plain irrigation in the past was bad and short-sighted. There are practically no roads, and in the hilly tract even drinking water is obtained with difficulty. Much damage is done by wolves, fox, and monkeys, the first named animal, though an outlaw, being regarded as sacred like the cow. Cattle turned loose, either in liberty to do what they please or devoted to the deity, have become quite wild and do much damage to crops.

Above the first mountain range are a country of wide valleys and high hills consisting of Hima, Kharagat, Ladimang, Nambra, and part of Hima. This has a more temperate climate than the tract just described. The supply of water by perennial streams is constant. On the stream beds are deep and irregularly shaped pools. Being subject to the Hindu kharif rains, rainfall is usually heavy and fairly constant so that the people do not create so much trouble about irrigation, except where this can be effected by artificial means. The crops are much the same as on the plains, but sugarcane and turmeric disappear. The seasons are shorter. The stream of fresh water, which the Himalayas can penetrate or approaches the surface of the soil, are con-

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strength, and there is always a danger that by overmanuring the soil will be too strong, and that the plants will run to waste. Jado is a light loam with a sandy bottom, and if there be sufficient irrigation and good manure the crop turn of rice is always large. *Doodhul* soil is chiefly based on low lying ground near the river, but it sometimes occurs in the higher stages. Special precautions are taken to run off irrigation water, and the rice plant shows signs of a too rapid growth, and if there are lakhs in time, the crop turn on *doodhul* land is sometimes very heavy. A peculiarity of this soil is that the irrigation water turns red in colour. Near the banks of the *Jhelum*, and in the vicinity of the *Water Lake* is found a rich, sandy soil (*masooli*), which is poorer in its reaction, yields more than a ton of sugar per acre and so on. This will not produce rice and requires no manure. It is, however, the easiest to burn standing weeds and the stubble of the last year's crop before ploughing.

The curious plantain known as *Arundo*, which grows in thickets in the groves and in the forest part of *gora* and, each variety distinguished by colour. The most for it is the dark blackish and known as *Arundo*, the red growth is the *gora* tree, which yields good a condensed the wood of all. Other classes are *Arundo*, and there are many kinds of *Arundo*.

The *Kashmir* are fortunate in possessing some of the most famous for their fields, and are not exempted by the natives of India, to use the greater part of the arduous for her. The rule is that the dung, whether of sheep, cow or goat, is spread in the winter when the animals are in the houses, or some of the agricultural work is the summer days in dung, and after being mixed with *Arundo* manure and other things is kept for four days. The cakes are carefully stored and the trees are heavily fed with it, the dung being used in regulating combinations. The dung heaps which are used in early spring show that the *Kashmir* wastes nothing that is useful in agriculture (and he has other resources). When the *Kashmir* commence in winter time is the *Arundo*, the sheep are killed on the fields, and the *Kashmir* consider that it is to be a far more effective. Penetration of the fields from the *Arundo* manure. There are not from the sides of *Arundo* manure and are not in use, and a dressing of this will strengthen a field for three years, whereas *Arundo* manure must be applied every year. The strongest *Arundo* manure is that of goats, and this is reserved for cows. The next best is the manure of sheep, which is always kept for the two successive years, once after dung, and later of *Arundo* manure. The value of light soil is thoroughly mixed.

wood. Near Srinagar and the larger villages the garden cultivation is extensive, and the only winter weed is pondweed, or night soil mixed with the foam of the icy aarps and jaiveredred by the action of the sun.

Irrigation. Agriculture in the valley practically depends on irrigation. This as to the formation of the country this is easy and in ordinary years abundant. If normal snows fall in the Hyind and the great mountains are well covered, the water supply for the fur and the aarps is good. The aarps have also extensive supplies of snow, which run down to the Jhelum. From both sides of the river the country runs to the mountains on both horizons, and the water passes quickly from one village to another in years of good snowfall. At convenient points on the mountain streams temporary dams or groynes are built, and the water is taken off in main channels, which pass over a network of small dams and eventually empty themselves into the Jhelum, or into the large swamps which lie along its banks. Lower down, where the streams flow gently, dams are common. All villages which depend for their irrigation on a certain river are obliged to assist in its construction and repair. The weir consists of wooden stakes and stones, with grasses and willow branches twisted in between the stakes, the best grass for this purpose being the *filol*. The channel often has to be taken over rivers and around the sides of the highest hills, and irrigation then becomes very difficult. In former days, when the State took a share of the crop, it was in the interest of the State to look after irrigation and to assist its repairs. But now, when all attempts were made to introduce a fixed assessment, the villagers have had to strive to regulate themselves, and where the channels passed through difficult ground the irrigation has become very uncertain. If a river has to be crossed, a flat horizontal head, similar to those in ordinary use, is covered on high treas, and the water flows over in a square looking aqueduct. When a stream has to be passed or started, a rough and sometimes a stone bridge is built, but as a rule the channel is cut along the face of the hill and great loss is caused by the frequent breaches. In old days every every main channel there was a *amrah*—one of the villagers whose duty was to see to repairs and to cut out the weeds. The *amrah* had not received pay for years, and the channels had fallen into great disorder, but the office has now been revived. The system of distribution is rough and simple, but it has the advantage that quarrels between villages rarely arise, and disputes between cultivators of the same village are

irrigation. Besides the irrigation derived from the mountain streams, an important and very useful is obtained from numerous springs. Some of these afford excellent irrigation, but they have two drawbacks. Spring water is always cold, and it does not carry with it the fertilizing salt brought down by the mountain streams, but bears a mass which is considered bad for rice. The channel in its long, gentle course through the valley gives no irrigation to growing rice, but as the population increases water will probably be lifted by the Persian wheel. The only left irrigation at present takes the form of the simple and unimproving pot and levee ditch, and in bringing and the small springs some scattered garden cultivation depends wholly on this system. On some of the drier hills the spring level is not very deep, and when all the land commanded by the irrigation has been taken up, it is hoped that wells may be sunk. The low level and rapid fall has found more neighbors than the Persian wheel, as the spring level is more than 10 feet in depth. In the north west of the valley there are a few tanks, and tank irrigation might be introduced with many gains.

The agricultural implements are few and simple. The large plough is of necessity light as the cattle are small, and is made of teak wood, the only very hard and the upper being perhaps the best material available. The ploughshare is tipped with iron. For clearing brush a *hassan* smaller is used and the work is done in gangs. Sometimes a log of wood is drawn over the furrows by oxen, the driver standing on the log. But as a rule frost, snow water and the process known to Americans are considered a sufficient agency for the denudation of fields. The *hassan* is made of wood, has a narrow tire and is tipped with iron. It is chiefly employed by the rich man for digging out tree stumps and for arranging his fields for irrigation. For maize and cotton, a small hand hoe is used to extract weeds and to loosen the soil. The *puke* and *muatar* for breaking rice and *hassan* must also be mentioned. The *muatar* is made of a hollowed out bowl of wood. The *puke* is of light hard wood and the *hassan* and *muatar* of wood for the purpose of the *hassan*.

Agricultural operations are rarely begun so as to fall within a certain period before or after the equinox, the spring day of the Buddhists, and the moon, or commencement of autumn. If the period is extended there will be a certain harvest in the crop, which is considered in a most precise manner. The circumstance which interferes with rain is by its falling and moving in the absence of irrigation water at the right time, and

in the spring there is great excitement among the villagers of Kashmir is caused by some natural cause such as the breaking of snow or by other causes, such as the greediness of some privileged persons who disturb the peasantry and cause more than the loss of crops of wheat. Up to recent times, the cultivator was often secured for forced labour and could not plough or sow at the proper time. And though there is no doubt that it is tough for the peasantry in the days after the harvest, working often and hard up to the breaking of snow.

In March the rice-fields, which have remained undisturbed since the last rice crop was cut are hard and stiff. The soil has perhaps been worked by the brins and snow, but it is sometimes the case, as snow has fallen, it will be difficult work for the plough because the soil and grass after the long winter is broken up the soil. If rain comes first, it is a great advantage for the ground and ploughing then commences. In certain villages the soil is so damp that going any further is dangerous rather than to be the case at once, and the soil will be a great deal better than from fields where the soil is ploughed in a dry condition. At the start of the village and the harvest season is carried out in the fields by a team and ploughed in, as is known as a pao or the high which the village has used to grow and to raise the fields as high as possible. Sometimes manure is placed in heaps in the fields, and when the soil is mixed with water it is a great deal better. Later in the year the weather again itself comes and the soil from the fields of manure and high land is cleared and being brought over the soil by the soil. Much has ploughing have been given and the fields have been prepared with water, the soil is watered and growing can commence in April. The soil which has been a great deal of time at breaking time has been watered and a great deal of water is again obtained and used by watering. It is then put back into the great high and manure in water with permanent manure. Sometimes the soil is poured in certain vessels through which water is poured. It is given up to an 1/2 inch of 1/2 inch and in the winter villages it is considered in the winter than in the winter in April, as the cold season comes on further and it is known as to not be a great deal more high. In certain areas it is a great deal of time in the winter to not the soil than in the winter the soil is always high. The ploughing for the soil and the natural water is not so good as for the soil and for the winter ploughing is not so good as for the soil. A warning is given that it is to make the soil to start the soil has no, therefore is not so

Cotton alone receives manure in the form of ash or mixed ash and seed. All Kashmiri recognize that the greater the number of ploughings the greater will be the output of the crop, but hoeings are few and the cattle are small and weak.

In June and July barley and wheat are cut and threshed. The cuts are made out by cattle or sometimes burnt by fire, and when there is no seed a blanket is flung to remove the grain. Anything is good enough for the spring crops, which are regarded by the Kashmiri as a kind of lottery in which they generally lose heavily. At the same time raises the seed sowing of rice was not the desirable one, as the wheat there is so long, its equivalent. It involves sowing 1 or 2 plants in these rigid places, and covering the soil mud piled around the grain sowing. No man can do the work, so only an expert can detect the considerable quantities thus prepared by his eye, and *dhokha* must be hired for sowing. The operation is best performed in hand but it may be done by the feet, as it is a fashion to stir sowing up and down the soil beds of mud (which are) sometimes when the rice is so high it is to do so a punishment for labor. When the rice is cut, the grain is taken to be in the water of one of the fields, and a short time before harvest a final watering is given which roots the grain. (There is a rice field standing, improved as said into the water. The ploughing is given, and a crop of rice is then given. (Enough). Before the harvest of the autumn crop comes on, about the first half of September, the rice is cut and it is very abundant. It improves the soil, and it is the reason the soil is so ploughed and not for the spring crops. Such man is known as *dhokha*, and still there is great rejoicing when these lands rain or so. Before September of rain has fallen, a large area of land will be ploughed up and sown with rice seed, and each has and is early sowing for barley and wheat, as if desperate to have crops at a time when the soil is so good, but the rice is not better, for then the *dhokha* is over and harvest has not commenced. There are rice cuts in the valley, but in the flat plain around the Thar Lake, where a great rice field is used, and as the Kashmiri will not use plough but only the harrow, the shoots of rice and of wheat are mostly and are mostly cleared by men in the threshing ear. When the stalks are thoroughly the threshing commences. Sowing a bundle of rice plants in has two hands, the cultivation is done over a lot of wood and debris, the cuts from the stalk. The sowing is done

fully sown, as it is considered the best sowing and the best that any stream of all.

When the weather is favourable, from October to December, the cultivator is busy ploughing dry land for wheat and barley but by the end of December ploughing must cease and the Kashmiri occupies themselves with threshing and husking the rice and other crops and such domestic work as [the rearing of sheep and goats and the weaving of blankets] is sufficient to keep a Kashmiri out of his reeking house. The ploughing for wheat and barley are very few and very shallow. For wheat three at the most, for barley five are considered sufficient. No labour is spent on weeding or manuring, and the standing crops of wheat and barley would shock a Punjab farmer. The fields are hoed with weels, and it is wonderful that these should be any crop at all. Two years of such wheat would starve a land, and the Kashmiris have the sense to leave a space crop by an autumn crop. Some day their attention may be paid to their barley and wheat, but even for present crops of these crops being largely produced in the valley. The rainfall is scanty and very uncertain, and if irrigation were anticipated the water in the springtime would prove too cold for plant growth.

The principal crops are two kinds, cotton seedling, tobacco, hemp, indigo, amaranth, buckwheat, jowar, and muskash in the autumn and a red, barley, pease, rape, flax, gram, and beans in the spring.

The most important article is rice and the cultivation depends all his energy in his crops. The rice is grown, and water must be kept running over the fields from some time almost to harvest but it is not the land nor even here and there, the fields are patches and the plant suffers, when the water is distributed is restricted irregularly. It is dangerous to leave the fields dry for more than seven days, and the irrigation should always be prepared to catch the water. The growth of weeds is very rapid and cover them get ahead if the rice is not sown, though to burn the weeds, and to remove the grasses, which some and are difficult to distinguish from the rice. There are two systems of irrigation. In one the best the rice is sown broadcast under the moon, it is first sown in a nursery and then planted out. The second system gives the best and best for rice but it is not as good as the first because than that is given in the nursery system. Two *dhadhas* are sufficient for the latter while four *dhadhas* are given in the broadcast sowing. Provided the sun is good and irrigation is

fairly abundant, the cultivator will choose the broadcast system, but in certain circumstances he will adopt the nursery method. If water comes late, rice can be kept alive in the nursery 10 ds, and the young seedling transplanted not later than 20 days after sowing.

Just as there are two methods of sowing the rice, so there are two methods of preparing the soil. The one is known as *do*, the other as *doan*. An old proverb says that for the cultivation the land should be absolutely wet or absolutely dry. In the cultivation the soil is ploughed dry, and when the clouds are perfectly free from moisture and do not rain enough when ploughed over the fertility at right season is given and seed is sown. In *doan* cultivation the soil is kept wet, and when three ploughings are made and the soil is half water and half mud, the soil with all drizzle is sometimes equal to that of *do*. But as a rule the *do* system gives the better results and *doan* involves the heavier labour.

The rice are infinite in variety. In one *doan* 500 three varieties have been mentioned. They may be said to be divided into two classes, the white and the red. As a food the white rice is the more esteemed and in fact of the white rice are the *doan* and the *do* so. These germinate very quickly and ripen more than a month before other. But they are very delicate plants and cannot stand exposure to cold winds. They give a small crop and require very careful husbandry. The white rice though esteemed as a food, is not so valuable as a point of view less popular than the red rice. The red rice has a greater nutritive value, can be grown at higher elevations, and is less liable to damage from such animals.

For a good rice harvest the following conditions are necessary. Heavy snow on the mountains in the winter to fill the streams in the summer. Good rains in March and the beginning of April. Long bright warm days and cold nights in May, June, July and August with an occasional shower and fine cold weather in November. All husbandmen agree that *doan*, or the ground covered in cold dew penetrating the water bank and cooling and hastening the ripening grain.

Next in importance comes grass. The best rice is *Wam* retained grass, and numerous crops are raised in good years from the back part and which are under the hands of the helmet. In the autumn grass is very abundant, but the grasses were fine crops of maize are grown, and the soil is due to the heavy manure given to the field in fallow and side. But with these crops maize never is so common.

ground runs it gives a fair crop. The better breeds, which bear yellow flowers, is not a mere Maksoff, but in the higher ranges often forms the only food grain of the people. The unshaded grain is black in colour and is never ground in mills and made into bread or is eaten as porridge. The sweet breeds are used to be a good food for horses and for poultry.

Pulses are not considered of much importance in the Poles. Peas and Pumpkins do not regard the Kashans *des* in a favourable light. Grain is unknown, and the first pulse is *soya* (*Glycine Soja*). The seed is ploughed three times and the seed is sown in May. No irrigation is given, and *soya* is often grown in new lands which require a rest. The seed runs deep and as the soil is not the other pulses are not (*Glycine soja*, *Glycine soja*, *Glycine soja*).

The *soya* is of two kinds and of some importance, and are known as *soya* and *soya*. It is called with the most careful they are selecting a greater value as a trade staple. The Kashans do not use *soya* further in their food, but they require very little of it, and as present they use them for feeding as well as for making into the *soya* of the *soya*.

The third *soya* is that of which there are three varieties. The first is *soya*, which is grown in the *soya* and *soya* on the *soya* and *soya* in the *soya* and *soya*. As a rule there is no *soya*, except where the *soya* is very vigorous. Timely rain from February to May is required, and the crop is harvested in May and June. The *soya* variety is known as *soya* or *soya* and is sown in the spring. It ripens at the same time as the *soya* but gives a smaller amount of seed from its seed. Three varieties of seed in the *soya* would be an average yield for *soya*. The other varieties of *soya* give less. The third kind is known as *soya* and is sown in the standing rice when the last *soya* is being grown. It yields a small crop, but as no labour is expended in its cultivation even the small crop is given.

I have been in several parts of the *soya* but the best fields *soya* are on the large slopes of the mountains. The land is ploughed four, and a third ploughing is given when the seed is sown in April. The crop is harvested towards the end of July. Timely rain is required in May in the plain waters. The *soya* is said to exhaust the land. An average yield would be 4 or 5 *soya* of *soya* in an acre, but with proper cultivation the produce could be increased. No manure is given and the *soya* are not weeded, and as a rule the *soya* crop is a very dirty and slovenly appearance. As the *soya* is

slopes of the mountains the plant has a longer stem, and some time ago a field attempt was made to grow this further. Like other engineering schemes for introducing new staples and industries into Kashmir the experiment failed as there was no one to supervise or encourage the cultivators.

Sesamum

The common radium, which is a very common crop, is sown in April. The seed is ploughed five times, and as it is ploughing is given as sowing. No manure is applied, but as it is water a 1/2 to 1 and goat and early rain. The crop is weeded only the hand hoe and is more a crop sown after than any of the other common plants. The plant is very delicate and is injured by cold winds. The crops ripen shortly after rain and harvesters are spread under the plants at harvest time to catch the seeds, which fall out of the pods with the slightest movement. In Kashmir the oil, which is sweet, is valued as an oil. An average yield would be about 15 mounds of oil per acre.

Oil

It is not a common place to give a good description of oil production. Purifying oil was done by the State in former times but this practice has been ceased, and the cultivator who has no means to purify his oil or to transport it has his own consumption as for sale. There are no professional oil presses all over the valley and they charge for their service a small amount of oil and keep the whole of the oil which they are in the village for a few days. The press is made of stone and is worked by a single bullock. The oil is pressed out of the seed and is carried in a bag. The oil is used with seed of a man who stands near. The Kashmiri say that rejected grain the seed of the lighting purposes, and would be no use, but after a while of hot sun it gets a pure oil from the grain, as the various seeds are dried by the sun and the kernels of the grain and apricot are added. The oil is given as a reward for the various seeds, that a much larger amount of oil is obtained by crushing together various seeds and kinds of seed than could be obtained from crushing each separately. The walnut is an important oil seed but this and the apricot are not considered to give good oils for lighting. Walnut is used to cook, and does not give half the burning power of other oil.

Cotton

Cotton is grown all over Kashmir up to a certain elevation and in a place where the white rice is to be cultivated owing to the coldness of the air there too the cotton plant

disappears. It is cultivated on the *barowas*, and also in low lying land which is irrigated but requires a drain from rice. It is sown should be ploughed frequently and never less than three ploughings are given, after which the seeds are well disintegrated by insects. The seed is soaked in water and mixed with ashes before sowing, but the plant receives no manure. Harvesting takes place at the end of April and in May and the fields are often watered at sowing time.

Wheat and barley are the two spring crops of the valley. Spring and of these the barley crop is the more important if we ^{barley} want to be considered. The barley ^{barley} commonly grown in the valley is not of a good quality and no pains are taken in its cultivation. It is ploughed in green, and when the seed is sown from October to November the land is again ploughed. The fields are not manured nor manured, and probably have not their match in the world for land and sowing cultivation. It is sometimes difficult to distinguish the barley in the form of *barley* seed (*barley*) of . . . The grain is not sown as a food, but is very often mixed by the dry with wheat. . . . The grain is higher in grain, at an elevation of 10,000 feet there is a great deal of ^{barley} at the end of barley known as *barley*, or a better barley than is an important food staple among the mountain people. The seed is always sown of it as wheat wheat is a grain that the half makes adhering to it, but is raised like wheat. The people say that if this is grown at a lower altitude, it reverts to the type of ordinary barley. It is sown in May and June, and ripens in August and September.

Wheat is not better treated than barley, but two wheat ploughings, with a third at seed time are commonly sufficient. The land is neither manured nor weeded, and as a rule no irrigation is given. Seed is sown in September and October and the crop ripens in June. The common variety is a red wheat with a small hard grain, and it is considered the flour to be very inferior. It is the grain of the area and is a staple food of the grain of wheat are the *barley* and *barley* as a food in the rice eating Kashmir, and the value of straw of these cereals is regarded as a cat of food and it is common to see large stacks of wheat straw left to rot in the land. On the other hand, rice straw which is not used for fuel, but until all else is in Northern India, is the most important fodder in Kashmir. It may be that the high *barley* renders the rice straw less fit to eat and more succulent than in India.

The saffron (*crocus sativus*) of Kashmir is famous for its yellow bouquet, and is in great request as a condiment and as a

pigment for the wet marks of Hindus. Various substitutes, such as turmeric, are now used for the latter purpose by Kashmiri Parsis, but if a man can afford it he will use the bright saffron colour mixed with red lead and rounded with a piece of deer's wood. The custom is peculiar and the legends about its introduction show as any rule that it is an ancient industry.

As present cultivation is extending as fast as the local method of irrigation can allow, it is clear that this method in itself may be inferred from the fact that at present most of a whole area of 4,100 acres of saffron land, only 130 acres were actually cultivated with the crop. In former days the saffron cultivation was a large source of revenue to be made, but in the Jammu the people in their distress ate up the bulbs, and a heavy weed has been imported from Amboyna and every good land is set apart for the production of wood, the potatoes and a mixture of them. It is said that there is a particular spot and a young ground is reserved, and it takes three years where the bulbs can be planted and in the small narrow plots where the saffron is to be grown. These plots must remain fallow for eight years, and no sowing can be applied to them and no animals are given in the way of water. When once the bulb has been placed in the square it will grow for fourteen years without any help from the cultivator men besides being weeded and the old ones being dug up. The time for planting it is in May and August, and all that the cultivator has to do is to break up the surface ground a few times, and to ensure the proper drainage of the soil by digging a wide trench on all four sides. The flowers appear about the middle of October, and the people harvest and the dew-wind, though warm at first, passing over the saffron turns the dry leaves into a dust which comes into a rose and a wonderful garden. The result is at present limited to the houses in the valley, and most of them have their own particular property in the soil, and there which have not come in other houses, though it is of an extremely good quality.

In former days men came from all parts to cultivate saffron on the Jammu districts, but now with the exception of a few people from Srinagar, the industry is in the hands of the cultivators. A harvest time the whole flower is picked and put into bags and then taken to the market, who takes the bag

¹ There are 10,000 or so in the highest of land covered with saffron, which is called a *proven*, but would not be that the best quality is done in the *proven*.

for himself and gives the other bag to the cultrator. The bags are never opened, and it has been found by experience that the cultrator never attempts to touch a third bag in the lotter. When the flowers have been cultrated he runs a stick of collecting within convenient. The flowers are dried in the sun, and the three long stigmas are picked up by the hand. The stigma has an orange red colour, has a known the shade between the red and yellow colour. The long whole base of the stigma also makes saffron, but it is of inferior quality to the tips. The article then cultrated in a dry condition is known to the trade as *safran*, and sells for one rupa per two. When the saffron bulb is has been cultrated the roots and flowers are broken lightly with sticks and scattered. Then the whole mass is thrown into water when the roots sink and the external parts of the flowers sink. The parts which have sunk (roots) are collected, are then when have sunk to the top are dried and again beaten with sticks and then plunged into water. The process is repeated three times, and each time the roots become finer. One form of adulteration is to mix a part of the chest with some of the first process. The saffron obtained in this way is lighter in colour and of inferior quality. It is known to the trade as *safran* and is sold at a lower price. The saffron when made is extracted by hand.

Next to the saffron cultivation is situated with the floating gardens of the Dai Lake, which surround the temples of the lake. The whole cultivation and vegetation of the lake is of interest and of great importance to the people. The floating gardens are made of long pieces of the lake with a breadth of about six feet. These pieces are covered with mud and are raised at the four corners by poles of wood into the lake bed. When the mud is sufficient to support the weight of a man, heaps of mud and seed are carried from the lake by boats, formed into rows, and placed at intervals on the mud. The rows are known as *poles* and each row accommodates two or three of seedlings or seedlings, or large seedlings of water melons or cucumbers. From this that plants are sown in general. A rich soil and ample moisture with the summer sun, help to produce a large crop of seedlings and seedlings. The floating gardens in fertility are the *seed lands*, which are formed along the sides and sometimes in the middle of the lake when the water is low. The cultivator selects his seed and plants various and sometimes popular along the four sides. Inside these he casts thousands of seed and seed

wind has laid it above the flood level, and year by year it adds a new dressing of the rich lake mud and sand. Around the shore (not far into the water channel) from the lake, so that mudstone is always present, and on the shore a great variety of crops is raised—knapweed, maize, tobacco, melons and other *landolana* products, cucumbers, radishes, turnips, egg plant, white beans, peaches, apricots, and quinces flourish on the rich soil, and if it were not for the constant winds to blow about and for the various system under which revenue is collected due to the half nomadic dwellers on the lake, the cultivators of the shore lands might be the most prosperous people in Asia. The system is of importance, as it is not confined to the lake, all over Kashmir the people who live in the great valleys have begun to construct these curious oblong patches.

Tulsi.

Tulsi is cultivated in many parts, but is chiefly grown in and around Srinagar and the smaller towns. The natives cultivate it and give the plant, and it is almost certainly in the hands of the gardener class which exists in the cities and towns. The plant yielding the most celebrated water is grown in the part of Srinagar, and is known as *Pranvi* (Sanskrit *Jatula*). It has pinkish flowers, and its petals, which is of a bright yellow colour, is extremely small and has a pungent taste. The leaves are very small and grow from the base of the plant. The plant is very common, and is raised by the first and best system. Formerly the State took a share of the revenue and allowed a high compensation rate for the crop, but in later years it has been put on a par with the other crops, and it is thought that the cultivation is not increasing. The leaves are of great use in the preparation of the great lemon, and the plant is very much taken in the form of seed, which is requested from Prithvi.

In the same rich land, black with productive, which the gardeners class of the city and towns cultivate so carefully and well, the same people in raised, and its dried capsules are used in the making of water, and also in the making of a great many other things. The plant is very common, and is raised by the first and best system. Formerly the State took a share of the revenue and allowed a high compensation rate for the crop, but in later years it has been put on a par with the other crops, and it is thought that the cultivation is not increasing. The leaves are of great use in the preparation of the great lemon, and the plant is very much taken in the form of seed, which is requested from Prithvi.

Apple which is larger but possesses all the flavour of the smaller kind. There are many other kinds, but the Kashmiri would give the palm to the *dad amir*, which is the sweetest and finest of his own. Many of the wild apples, such as the *ad shahr* and *madama*, are very refreshing, and it is a curious fact that the greater part of the orchards contain entirely of wild trees.

About the beginning of September the people pick the wild Apples and the *dad amir*, and having cut them in half dry them in the sun.

The pear is an eye of secondary importance, and does not form a large article of export. But several very good kinds are cultivated, the best of which are the *mad amir* which has a beautiful shape and a sweet very fresh and delicate flavour which has a piquety feel than and is a very palatable fruit. The Kashmiris, though they think it essential to pick an Apple before just juice. I have been told that it is dangerous to eat pears in the winter. Cold in the head and the eyes is the result of such indulgence. The early pear is known as the *good day* and is very refreshing, and the later fruit is raised long. It may be here and keep for long, and late sorts are required. From the State Agriculture gardens of Poonch just before going out at over the valley but you will see are many varieties which are quickly transplanted to the orchards which I have seen of pear is found all over the valley and in other regions the *peary* pear of Herefordshire.

In gardens, and also about the houses, and in the gardens of the *sheikhs* and *sheikhs* a quantity of this fruit are to be seen. The tree is grown in its seed, which is exported to the Punjab. Peach stones are common, but are not of any especial merit.

In all parts of Kashmir was cultivated for its grapes. But over the valley at the mouth of the main valley by which it is difficult to obtain a good dressed grape in the country. Even when the grapes are very good and the quality of grapes and their trees and they are often as are the fruit is just as good. The people say that they do not know these good vines in order to grow the vineyards of the valley. The grapes, which are sold from the State vineyard at Roorkee in the main valley are of a good quality and efforts are being made by the Government to improve the quality of the fruit of the valley. With the intention of the valley grape there has been an attempt to introduce the *black* grape and it is evident there are plenty of vines in the district of the valley. The vines were planted from Bordeaux in Maharashtra in the valley, and no experiments were made to make the scheme a success. Perhaps the vines

of Burgundy would have been more suitable. Coach-drawling plans was improved and set up at Gulahar on the Jhel Lake, and a row of the black and horse varieties, as well as carriages, have been manufactured year by year. The only machine at present in Srinagar is the long road carriage and the others found at the frontier make it difficult to do over more in India at a moderate price. In 1900-1 the gross receipts were Rs. 13,000, and the net profit had averaged about Rs. 11,000 in the preceding four years.

Hops. If not more ably cultivated by Bhadrachal Ranbir Singh, and the hop gardens at Gulahar below Gulahar yields a handsome return to the State. In 1900-1 the total produce was 13,000 lb. The crop is sold at from 12 annas to a rupee per pound, and has netted Rs. 21,000, while the expenses were only Rs. 3,000.

Walnuts. The walnut tree is indigenous to the country and is known by the vernacular name *nuar* and *nuar* *batul* (as under ordinary circumstances it is used to break the stone). The fruit is flattened, not the bark used to be a large object to the Europeans. The fruit of the cultivated tree is an important and to the village through the people seem to be somewhat as directed to its reproduction. The tree is found all over the valley from an elevation of about 3,500 feet to 5,500 feet. It is propagated from seed, and although grafting is not unknown, the general idea seems to be that the tree varieties the *de-hara* the *har-ka*, and the *nuar* region are chosen as being most fit to grow. Walnuts have been grown for oil and not for eating, and the *nuar* is quite a hard shell, is the largest fruiter and gives the most oil. The *de-hara* variety half way between the *de-hara* and the *nuar* and is like the ordinary walnut of England. Some of the trees reach an enormous size and the forest departments are to be found on the surface the mountain valleys. In former times the State possessed walnut oil in payment of revenue, and it was more profitable to the village to give oil as revenue than to sell the nuts to the State. Now the oil is used as revenue and the export of walnuts is rapidly increasing. The Kashmiris do not care for the nut as a food as it is too big, but it always forms part of the *Nawab* and presents among Hindus and Muslims. Not long ago the walnuts were in used in a very serious danger. In 1890 there was a demand for the huge warts about 2,000 on the walnut stem, the wood of which is used by almost all for varnish work, and a Frenchman obtained from the State the right to saw off these warts. Countless trees were destroyed, but life went on with the war.

Another danger to which walnut, like other fruit-trees, are exposed is the occurrence of the *but frost* an icy wind which settles over the valley in severe winters, and freezes out the life of the trees.

Large almond orchards are scattered over the valley and almost every one of the hill sides might easily be planted with this hardy and profitable tree. It is a somewhat uncertain crop, but very little attention is paid to its cultivation, and as a rule the almond orchards are uncultured. There are two kinds, the sweet and the bitter; the former is worth double the latter in the market. Bitter almond gardens in all parts of the valley prove the fact that State endowment cannot succeed in tree culture.

There are several varieties of the *negundo* (*Fraxinus* negundo) but all seem to have their flowers floating on the surface of the water on stems supported by air vessels. When the first opens, the rest sink to the bottom of the lake. The *negundo* is found on the Dal Lake and in other nooks, but its home is the Wular Lake. Of the most curious the best is called *Arumati*, in honour of the river of that name. This is a small tree with a thin stem, and gives somewhat of interest for its thorns of shell. The *darra* is a larger tree with a thicker shell and the *darra* has a very thick shell with long projecting horns, and gives the least kernel of all. Attempts have been made to propagate the *darra* but it is found that after one year the inferior varieties appear themselves.

The cattle of Kashmir are small but hardy, rather bigger than British cattle. They have horns, and their general colour is black or grey. Very little attention is paid to selection or breeding, but a strain of Punjab blood has entered the valley and the dairyman knows cows of that type. The improvement of the local breeds has been seriously considered by a committee. As summer approaches, all cattle are by requisite enough bullocks and the cows are taken off to the mountain pastures, returning in the autumn to the villages. Great pains are taken to store fodder for the winter and there are many excellent grasses and fodder trees. The Gújars, who live on the fringe of the forests, keep a large number of bullocks and produce a considerable quantity of milk.

Sheep are large & hardy. They require warmth, clothing, and manure, and are of great importance to the villagers. As the days grow warmer the sheep come up to the grand pastures above the forests, and return in the autumn. The sheep are made over to professional shepherds when they go to the

mountains. In the winter they are penned beneath the dwelling rooms of the villagers, and much of the Kashmiri's comfort in the cold months depends on the heat given out by the sheep. The wool is excellent, but it varies in quality. Roughly speaking, the finest wool is found in the north of the valley where the grasses are good. For winter fodder the Kashmiri depends on willow leaves and the sweet dried leaves of the dog rose. Salt is always given to the sheep.

Goats are not numerous in the valley but every year enormous flocks are brought up to the mountains. They do much injury to the forests.

Poultry. The poultry are small, but very hard of great endurance. Every village has its brood mares, but no care is taken in the selection of sires. There is a great desire for rational breeding, and also for double hatching.

Purkies. Purkies is abundant. The best breed of horse is found in the Ladak valley. Turkeys and ducks are common and there is a large export of the latter to the Punjab. Turkeys have not yet been bred in Kashmir.

Honey. Honey is produced in the higher villages of the valley. One house will often possess many hives, and in a good year a hive will give 11 seers of comb. The hives consist of two large earthenware pigmies set one the neck of the other and in the outer pigmy there is a small hole through which the bees enter. The honey is clear and excellent.

Manufacture. It is believed that the silk industry of Kashmir is of very ancient date and that the valley furnished part of the Rawan silk which found its way to Damascus. In 1849 Mahabadi Khan Sahib, who was an enthusiast in new industries, organised sericulture on a very large and expensive scale. But the industry was altogether as it was conducted on purely official lines in which Government played a great part. There was no real skilled supervision, demand attacked the silkworms, and the enterprise languished. But in spite of mistakes and failure it was proved that Kashmir could produce a silk of high quality. In the Kashmir valley to the north the industry began to revive, and the Government (then Mr. James MacGillivray) increased it but it needed very large outlay. Experiments were pursued in 1864, and was done on the English market with satisfactory results. Since then an expert was employed, and the State started sericulture on approved European principles with Indian rearing machinery. All attempts to raise local seed was abandoned and seed was imported annually on a large scale. The results have been

are found mainly in the Javon district on the Nam river where there are about 3,000 acres of mixed forest which contain the so-called male bird (*Arundinaceae strictus*). They are valuable at a good price but are in process of being so much injured from the Chinese tribes, who hack them for fuel for their cattle. The grass areas are mostly blank, inside ditches and other forests, which are used as grazing grounds by the villagers.

In the Kachin Valley the forests supply timber and firewood for local use and also logs for export. During the past few years double sheepers have been exported down the Salween river, the sheepers sailing very well through the forest as they are good as in other districts. This double species is regarded as comparable with high pine which being both very durable and cheaper than double in the domestic building material. From a Chingpur both logs and sheepers of double are exported down the Salween to Wundwin. The species having a better quality higher prices are obtained for the primary than for that of Kachin. From Wundwin timber is sent in the log and sent into various is exported down the Salween. The sheepers are entirely of double but logs of both high and long leaved are also sent down at the same time. These three districts, Kachin, Chingpur and Wundwin, give the greater part of the forest revenue which amounted to 6,8 lakhs in 1904-5 while the expenditure was 3 lakhs.

Up to the present, during the working of the forest ^{imperial forests} the forest has been done in the way of a careful preservation of double but not sufficiently. Having in the present measures already taken, the three important species, double high pine and the long leaved tree, are rapidly being cut blanks in the forests. The reproduction of double by natural means, whether in Kachin, Chingpur or any other district is remarkably low in the high pine as well as in the long leaved tree and the reproduction of double is also very low in the forests in all that are in danger. Since the last great wood cut of 1904 several of the forest have been acquired and are now for healthy plants, ranging from 10 to 20 years in height. The natural double tree now there is little or nothing to be done in the matter of working damaged areas or blanks. No fire protection has been necessary yet, hardly anything has been done in it, and the only parts protected are the Kachin and Wundwin. The greatest need at present is protection from the damage done by grass.

About three quarters of the State forests have been drained, and before any scientific forestry can be introduced, it will be necessary to have a regular survey made and a statement of the forests effected, and the great task of drawing up working plans for future guidance must be undertaken.

[illegible]

Melvin L. Bell

Some scholars have held that there is not much hope of success with the State and among the reasons given is the fact that as a rule, if valuable minerals exist, the natives of the country know of their existence. The Kashmiris, however, have excellent reasons for refusing to be misled by this fact, and the fact of valuable minerals in Jammu in 1883 and in some parts of Kashmir in 1901 and 1902 in the Kashmir Division have very recently given hopes for the future. The world has been kind to two or three of which is estimated that there are 1,000,000,000 of tons of coal. There is a reserve for the day and day. Some of the other things it is said to give heat. It is held by modern scholars that the world of the present day of these things will have a value equal to, if not greater than, the present coal. Exploration for minerals has not yet been attempted on a wide or systematic scale. Prospecting has been conducted at Sial in the north of Kashmir and some other places in the lower mountains. Prospecting is necessary and a great deal more of work has been made at Sial, the last summer report of Government of India in Kashmir.

1. **Author:** [Name]
 2. **Title:** [Title]
 3. **Year:** [Year]

The industries connected with agriculture, wine-making and the manufacture of wine and brandy have already been mentioned, but the State is still more interested in its arts. The most important of these is deer-hunt and an article on Fox-hunt, but other papers also present considerable material for various classes. *Wool-cropping and other uses*

	1892-3	1902-3	1904-5
	Rs.	Rs.	Rs.
Raw goods —			
E. ropes	76,688	34,71,434	36,91,330
Indigo	71,372	9,80,185	7,80,438
Metals			
Brass and copper	1 33, 43	1,48,140	99,888
Iron	1 31, 170	4,21,000	1 9,267
Salt	4,82,193	8,69,381	9,31,601
Sugar			
Refined	4,81,484	9,81,874	8,28,675
Unrefined	1,12,413	8,47,680	3,43,751
Tan			
Indian	1,73,730	3,57,638	5,22,971
Foreign	8,030	1 360	3,615
Tobacco	1,01,162	3,30,103	6,71,960
Petroleum	96,114	31 793	1,84, 64

In 1892-3 the total exports were valued at 53.5 lakhs. In 1902-3 the value reached 44.6 lakhs, and in 1904-5, 54.8 lakhs.

The following table shows the value of the more important exports in the years selected —

	1892-3	1902-3	1904-5
	Rs.	Rs.	Rs.
Drugs, not intoxicating	1,60,613	2,08,191	3,78,413
Flax	5, 4 396	99 155	44,011
Fruits	2,38 63	4,68 101	7,48,883
Grains	1,26 391	1,47,617	7,28,160
Wool	1 19, 376	1,43 130	3,68,063
of	18,130 71	20,06 149	30,44,974
Limeed	1,138	8,33,074	4 73,031
Wool			
Manufactured goods—			
Wool	3,47 190	7,31,363	14,73,647
Wool	8 9, 1 3	25,000	1,000

The value of fruits exported is increasing steadily, and would expand further with more rapid communications. GAD also is a very important export. Perhaps one of the most remarkable increases is that in limeed, which possessed very little value before the opening of the cart-road. The trade in shawls was practically dead before 1892-3. An important new staple not included in the list must be noticed. Raw silk produced in the Kashmir Valley has been exported in rapidly increasing quantities and values, and there are indications that it will become one of the most important products of the country. The value increased from Rs. 7,000 in 1897-8 to 13.6 lakhs in 1902-3, and nearly 21 lakhs in 1904-5.

Through
trade

Another item of some importance is the trade which passes through Kashmir between India, Chinese Turkestan, and

The only railway at present is a short length of 16 miles, constructed at the cost of the State, which is included in a branch of the North Western State Railway from Wazirabad through Sialkot. It cost 9.6 lakhs, and has usually earned a net profit of 1 to 2½ per cent., in addition to the rebate allowed from traffic exchanged with the North-Western Railway. A line has been surveyed along the Jhelum valley route, and it is proposed to work this by electricity derived from the river.

The State is included for postal purposes in the circle administered by the Postmaster-General of the Punjab and North-West Frontier Province. Formerly Kashmir had its own postal service and used its own postage stamps, but as far back as 1876 there were British post offices in Srinagar and Leh. The State stamps were used only for local purposes, and letters and other postal articles passing between the State post offices and British India were charged with both Kashmir and Indian postage. In 1894 the State posts were entirely amalgamated with the Indian postal system. The following statistics show the advance in postal business since 1880:—

	1880-1	1890-1	1900-1	1904-5
Number of post offices	4	9	11	28
Number of letter boxes			199	107
Number of miles of postal communication			1,688	2,624
Letters sent by post				
Letters	28,186	27,816	1,414,100	1,70,679
Postcards	2,406	16,828	104,82	1,630,430
Packets	23	6,16	96,155	60,100
Value of goods sent by post	21,028	20,106	93,144	240,114
Parcels	741	4,972	34,86	9,426
Value of stamps sold in the State	2	2	1,030	1,06,018
Value of money orders raised	2	2	2,00,591	6,87,287

* Including unregistered newspapers.

† Per cent.

‡ The figures are included in those of the Punjab.

Famine

The accounts of early famines are vague, but it is known that they occurred. While Sher Singh was governor (1832-3) severe distress was felt and many people died, but the next governor, Maan Singh, did much to restore prosperity by importing grain. It is said that the population was reduced to a quarter of that famine. In 1877-9 a worse disaster was experienced and the loss of life was enormous. Famines in Kashmir are not caused by drought, as in India, because the

Under the *Wazir* *Wadris* are *Subedars* and sometimes sub-divisional officers. All these officers exercise revenue, civil, and criminal jurisdiction, with regular stages of appeal. In revenue cases the appeal lies to the governor, and from him to the revenue minister. In civil and criminal judicial cases the appeal lies to the Chief Judge of Jammu. From him there is an appeal to the judicial minister who is virtually the final court and it is very rare or assume that an appeal is made from him to the *Maharaja*. All death sentences passed by the Chief Judge require the confirmation of the *Maharaja*. In 1900-1 there were eighty-one courts of all grades, of which eight exercised criminal jurisdiction only. Although there is a centralized form of government as in British India, the real power rests with the *Subedars*, and *Subedars* and the *Subedars* of many *subdivisions* are practically checks on the use or abuse of appeals.

Before 1837 when the law of limitation was introduced into Jammu, litigation was not very heavy and the people frequently visited their *Subedars* out of court. The increase since in the number and the efforts of the *Subedars* in the law are shown by the fact that the number of suits for recovery of *Maharaja* property increased from an average of 3,133 during the ten years ending 1846 to 10,706 in the next decade, and was 12,700 in 1900-1. The system of registration for death sentences that in British India. In 1900-1 the number of the *Subedars* registered was 1,345.

There is not epidemic in the Jammu province but there has been an increase in cases of cholera, typhoid and dysentery, due to the greater activity of the *Subedars*, which is being gradually assimilated to the rules and procedures prevailing in British India. In the whole state 15,300 persons were brought to hospital in 1900-1 of whom 2,100, or 13 per cent, were recovered.

In Kashmir the *Subedars* in the *Subedars* are supervised by the governor himself while those of the *Maharaja* *Subedars* are in charge of a *Wazir* *Wadris* subject to the governor and the Chief Judge, whose offices are in Srinagar.

Finance.

The finances of the state are immediately controlled by an American general, who for some years has been lent in the British Government. The revenue and expenditure for 1895-6, 1900-1 and 1905-6 are shown in 1000 as the end of his office, 1905-6. In the last year the total revenue was 43 lakhs, the chief sources being land revenue 34 lakhs, forests 3 lakhs, customs and duties 4 lakhs, and scientific and public departments 2 lakhs. The expenditure of one crore included

public works 30-8 lakhs), military 15.8 lakhs), petty police and courts 10.9 lakhs), scientific and other departments 12.1 lakhs, and land revenue 66.1 lakhs. The State is very prosperous, and has more than 46 lakhs invested in securities of the Government of India.

The British rupee is now the only rupee used in the State. Previously three coins were current: namely, the *dharm* rupee, value 8 annas, bearing the letters J H S. These letters have given rise to many abuses, but they were really a month-name to indicate January, Han Singh; the *shahi* rupee, value 10 British annas, the *Amal shahi* rupee, value 12.16 British annas.

The *dharm* or *amud*, which has for centuries past been the standard of weight, is equivalent to 177½ lb. The *amud* is usually abbreviated to *dharm*. Land measures are calculated not by length and breadth, but by the amount of seed required by certain areas of rice cultivation. It has been found by measurements that the *dharm* (4 used) - that is, the rice seed which is sufficient, to require a *dharm*'s weight of rice seed, exactly corresponds to 4 British acres. For length, the following measures are used: -

1 *gana* = 12 *hathas*.

20 *ganas* = 1 *guz*.

20 *guzas* = 1 *guz*, in measuring *ghat* lands.

There is no scaled yard measure in Srinagar, but from frequent experiment it was found that the *guz* of 16 *ganas* is about 4 inch longer than the British yard.

The land revenue system has been described as *exhaustive* in ruins. It is probable that the methods of administration introduced under Akbar led to a disastrous result, but this was never fully accepted. The land was regarded as the absolute property of the State, and the cultivators were merely tenants holding from year to year with no rights in the waste land. Within the village, however, the cultivators retained the acquisition of what may be called a right of occupancy acquired by long possession (*mirat*). At the settlement which commenced in 1847 this custom was accepted by the State, and permanent hereditary rights were conferred on persons who agreed to pay the assessment fixed on the land entered in their names. The right is not alienable by sale or mortgage, and the holder is rated an *awami*. Besides the ordinary village occupants there were *ghat* tenants, but these have gradually been converted into *awami*.

Under the local Sultan the State share of produce was sometimes

retained at one-half, and this was increased to three-quarters by the blagahs. In the absence of any survey or record of rights, the revenue system was harsh and corrupt. Tax agents and farmers were appointed who paid into the treasury probably the sum of cash allotted to each farm being regulated by the number of individuals it contained. The state took three-fourths of rice, maize, mustard, and black wheat and four-fifths of all other products and animals. In 1800 the state was reduced to one-half and villages were made over to contractors called *shikadars* who shared the cultivation and the taxes. An attempt was made in 1831 to reduce a regular settlement for three years, but the interests of the *shikadars* and corrupt officials were too strong to allow such an innovation. In 1841, on the Arco River, notes that even then was chiefly paid in kind in Kashmir and it was not till 1846 that a land and revenue settlement was introduced. This was made by taking the average rates which the *shikadars* there gave in each village and adding a quarter of the produce, hence less than 50 per cent. But as a matter of fact it was still an effort to do so for much revenue would be taken in cash and sent south in kind. There was no process of inspecting villages, or of distributing the demand land for a whole village over separate holdings, and the distribution caused by the issue of 1839 added to the evils of such summary measures. The result was a system of distributing villages was introduced, which led to even greater abuses, when the expropriation taxes for grain were altered, as in 1846 and 1847.

In 1848 a regular settlement was commenced in the valley by a British officer aided by contractors. It was provided by a company system and the territory was divided by the state. Villages were assigned according to their position and standard estimates of produce were established. In estimating the produce allowance was made for variations from years of good and bad harvest. The settlement was also facilitated by consulting the regulations in previous years and recent trade in former distributions. In regulation and more than 1000 are stated by the return of the calculation who had died during the disastrous famine. When the settlement was completed in 1850 it had cost 30 lakhs and had raised the revenue to 10 lakhs annually. A revision was commenced in 1851 and completed in 1855, the methods employed being similar to those followed at the first regular settlement. This has further raised the revenue in the valley from 10 to 12 lakhs, or by

17 per cent. The incidence of revenue varies from about 20 annas to Rs. 12 per acre, and represents an all-round rate of about 30 per cent. of the gross produce. Regular surveys have also been completed in other parts of the state, such as in Jammu and Baramulla. The total receipts from land revenue amounted to 37.4 lakhs in 1905-6.

The Public Department of the State is chiefly concerned with the manufacture and sale of liquor, including wine and brandy at the Jammu distillery. In 1900 the administration was examined by an officer sent by the British Government, and as a consequence of his criticisms in the past few years of Jammu were undergoing a great deal of improvement. The total receipts in 1900-1 were only Rs. 30,000, but by 1905-6 they had risen to Rs. 1,31,000.

In 1905-6 the total revenue from stamps was 2.25 lakhs, of which 1.6 lakhs represented receipts from stamps on stamps.

A considerable increase is derived from customs and duties levied on the trade which passes over the State. The receipts amounted to 9.8 lakhs in 1905-6.

Corn and grain, amounting to 1.5 per cent. on the land revenue, but the following special payments to landholders: village headmen, 5 per cent. *patwari* are paid, 4 per cent. *ekdast* (per cent) and *malik*, 2 per cent.

There are two municipal corporations in the State one at Srinagar and the other at Jammu, provided with by the Chief Minister, Mr. K. K. K. and the Governor of the State respectively. The Municipalities are controlled by the British as representatives of different communities. There is no separate municipal fund; the State provides the expenditure for municipal and sanitary purposes, while the Municipalities, such as water, are likewise provided to the general revenues. The expenditure in 1905-6 was Rs. 97,000, of which Rs. 5,000 was met from fees and taxes and the balance by a grant from the State. In other municipal corporations established in the province which are under the management of the Government, the State is also responsible for improvements have lately been made in the drainage system of Jammu town.

The expenditure on public works in 1905-6 was 30.8 lakhs, and will surely be heavy. The maintenance of long lines of communication between Kashmir and India and between Kashmir, Gilgit and Ladakh, the road to Srinagar and Jammu, and the numerous houses which have to be repaired when great floods and earthquakes occur render a large annual outlay inevitable. The road from Kohala to Baramulla alone

Serious crime is rare, and the force of regular police is small. Police comparatively small. It includes 3 assistant superintendents, 9 inspectors, 147 sub-divisional officers, and 1,113 constables, costing about 22 lakhs annually. The force is controlled by two Superintendents for the half provinces of Jammu and Kashmir. Police duties in the villages are performed by the *chambdars*, who are generally Hindus in the Jammu province and are paid by the villagers. The responsibility of the headman for reporting crime is insisted on. A standing fund for regular police is maintained, and the system of identifying criminals by thumb impressions has been introduced. In 1905, only 8,076 cognizable cases were reported, of which 640, or 8 per cent., ended in conviction.

Central jails are maintained at Jammu and at Srinagar (and seven small jails in outlying parts). Both the latter jails are usually overcrowded, the daily average number of prisoners in 1904 being 543. The expenditure on the same was Rs. 27,000 in the Central jails and Rs. 3,000 on the others, and in 1905 a total of Rs. 3,000. Convicts are employed in procuring timber, making iron, and other work, and in the Srinagar jail used in weaving, spinning, and manufacturing an article at Jammu. The receipts for jail manufactures in 1905-6 were Rs. 18,000.

The Government of 1904 showed little attention was formerly bestowed on education. In that year only 2 per cent of the population knew read and write. Among males the proportion was 1:16, yet not while among the female population only 1:250 were literate. Hindus appear to be much better educated than Muhammadans. In 1901 the State High School at Srinagar attended by 4,193 boys. By 1905 the number of high schools had risen to 14, including two high schools, a normal school, 7 Anglo-Vernacular and 12 vernacular middle schools, and 172 primary schools. Besides these 1 high school at Srinagar in the State of Jammu, and there are one high school at Jammu, two other high schools and an Anglo-Vernacular school at Srinagar, and an aided middle school at Jammu. Besides schools are the State High Schools, one at Jammu and the other at Srinagar (both of the Sikhs manage). The total number of pupils in all the schools was 21,400. The department is under the control of the foreign minister who is aided by an officer and two assistant secretaries of schools. There being no State College, 17 scholars ships are annually granted by the British to students for pursuing advanced studies at colleges at Lahore. Two scholars

of Kashmir (1848). J Biddulph *Tribes of the Hindu Koots* (1880). — [See *Jammu and Kashmir Territories* (1875).] — E. F. Knight *Where Three Empires meet* (1893). W R. Lawrence *The Valley of Kashmir* (1895). Halhana's *Rājataranginī, a Chronicle of the Kings of Kashmir*, translated by M. A. Stein, 2 vols. (1900).]

TABLE I.—TEMPERATURE, KASHMIR.

Location.	Height of Observatory above sea-level.	Average temperatures in degrees F. for twenty-one years ending with 1905 in									
		January.					May.				
		Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.
Baramulla ^a	5,004 11,603	33.2 19.1	14.8 20.4	61.4 49.4	21.2 26.5	74.8 65.8	26.8 26.9	46.4 34.0	12.1 26.5		

The figures here are the averages for those years only.

Note.—The diurnal range is the average difference between the maximum and minimum temperatures of each day.

TABLE II.—RAJNITAL, KASHMIR.

Location.	Average rainfall in inches for twenty-one years ending with 1905 in											
	January.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Baramulla ^a	3.16 0.15	4.14 0.11	5.36 0.50	3.24 0.40	1.93 0.11	1.67 0.16	3.03 0.47	2.26 0.27	1.44 0.21	1.12 0.18	0.47 0.03	2.24 0.17
Total of year.												26.30 3.05

^a The figures here are the figures for those years only.

TABLE III DISTRIBUTION OF POPULATION, KASIMIA, IN 1901

Districts	Area in square miles	Number of towns	Number of villages	Total Population				Urban Population			Area per square mile
				Persons	Males	Females	Proportion	Proportion	Males	Females	
Amul		1	1,100	244,018	123,302	120,716	13,706	16,40	22,810	1,000	267
Udhampur			1,051	242,048	75,426	166,622	32,653				244
Bhimber			2,076	200,137	110,078	90,059	30,344				933
Jasurda			846	154,331	81,301	73,030	7,811				193
Punah			314	153,799	176,179		205,000				
Total, Jammu Province	1,413 ^a	1	4,474	1,310,300	807,702	502,598	2,33,111	26,30	22,11	3,000	
Khas		1	9,017	246,196	106,150	140,046	46,323	11,611	65,001	37,226	104
Muzaffarabad			117	163,398	90,399	72,999	75,699				64
Total, Kashmir Province	7,922 ^b	1	3,706	137,396	616,487	540,307	240,307	20,611	66,600	37,226	192
Ladakh			624	165,001	91,600	73,401	81,201				40
Gilgit			244	60,815	33,279	27,536	17,107				298
Total, Frontier Districts	443 ^c		768	106,877	117,378	109,499	109,499				311
Total, State	30,000	1	8,996	2,903,378	1,542,057	1,361,321	1,361,321	23,146	67,763	70,052	363

^a Of the area, 1,410 square miles are irrigated and 3,003 remained. In this row, under the "Area".^b Frontier area only.^c Calculated on area actually cultivated.^d Calculated on total area.

TABLE IV
PRINCIPAL SOURCES OF REVENUE, KASHMIR
(In thousands of rupees)

	1899-0.	1900-1.	1901-2.
Opening balance +	39.52	41.49	28.06
Land revenue	25.72	26.74	26.01
Customs and excise	4.22	7.6	6.20
Grain and salt	0.27	2.22	4.24
Excise	27	30	1.27
Receipts from State property in raddi	1.00	43	26
Stamps	1.27	1.22	2.22
Courts of law +	27	20	21
Police	2	3	19
Post Office	42		
Telegraphs	3	6	0
Schools and other depart- ments	2.21	2.70	0.20
Sericulture	7	2.67	14.00
Forest	01	1.20	1.20
Private	0.00	0.21	12.01
Military	26	00	25
Public works	74	40	28
Miscellaneous +	3.40	8.22	2.26
Total	67.40	79.36	90.29
Debt and remittance	1,41.10	1,27.04	3.11.71
GRAND TOTAL	2,08.50	2,06.40	1,93.99

TABLE V
PRINCIPAL ITEMS OF EXPENDITURE, KASHMIR
(In thousands of rupees)

	1905-6	1906-7	1907-8
Land revenue	3.15	4.77	6.12
Customs		15	1.50
Forests	2.33	2.84	2.95
Post Office	.6		
Telegraphs	.73	.48	.19
Posty purse and costs	9.22	11.45	10.17
General administration	1.78	2.27	2.17
Courts of law	.45	.88	1.10
Jails	1.1	.87	.34
Police	2.48	1.97	2.43
Education	.33	.60	1.05
Medical	.62	1.39	1.67
Political	1.74	2.36	2.58
Science and music departments	.72	1.02	2.11
Antiquities	.5	2.52	7.15
Ignition and gratings	2.10	1.34	1.32
Stationery and printing	.40	.64	.48
Revenues, etc.	2.07	1.34	1.67
Refunds	.36	.22	.54
Military	12.34	11.59	11.87
Public works	12.40	12.90	20.80
Miscellaneous	2.57	.32	.72
Total	61.13	62.32	102.41
Debt and investments	1.32.12	1.21.32	1.17.02
Total	1.43.25	1.47.02	1.19.43
Closing balance	24.2	45.68	14.21
GRAND TOTAL	1.67.47	1.92.70	1.33.64

by great glaciers and the formation of great thicknesses of brown ice deposit. The Indian has been the cause of serious and disastrous floods—the rapid stream dashes down gorges and wild mountain valleys, and in its lower and more level course it is swept by terrific blasts. Even in summer when it is said to decline often to a fordable depth during the night it leaps during the course of the day used into an impassable current from the melting of the snows on the adjoining heights. Crignier Nibela on its left bank is 10 miles at the mouth of winter Sagranu symmetrical more than 300 feet wide and 9 or 10 feet in depth. After leaving this it flows for about 20 miles north west through the hills of Khatulin, until it enters the North West Frontier Province (11° 45' N. and 71° 51' E.), near Dardara at the western base of the Malakand mountains. The only point at which special attention can be made in the long stretch of its course beyond British territory is the wonder of gorge by which the river bursts through the western ranges of the Hindukush. This gorge is near Nibela, and is said to be 14,000 feet in sheer descent.

The Indian on entering the Malakand District of the North West Frontier Province has passed nearly its source is about 100 miles north in August reaching its extreme end of its great depth and thickets with sandalwood groves. It is fordable in many places during the cold season, but floods or freshets are sudden and rapid enough to need to have used a force completely stated at least 1,000 to 2,000 horsemen in taming the river. Even the large and small boats which ply upon it are sometimes swept away. Almost opposite Nibela it receives the Khatul river which brings down the waters of Afghanistan. The two rivers have about an equal volume, both are very swift and broken up with rocks. Thus again during floods in the winter of a wild confusion of waters. The Khatul river is not going for about 20 miles above the confluence but a rapid and shallow it remains the Indian river while. Although the river is the greatest equivalent from the first important point on the river within British territory. By this time it has flowed upwards of 100 miles, or nearly one half of its total length, its further course to the west being about 220 miles. It has fallen from its elevation of 27,000 feet at its source to that of about 2,000 feet the height of 4 miles being 200 feet. In the hot season, opposite the fort at Nibela it is 13 miles in height and in the cold season 5 to 7 miles. The rise of ordinary floods is from 5 to 7 feet in twenty-four hours and the maximum is 20

feet above usual season level. Its width varies greatly with the season, at one time being more than 250 yards, or perhaps less than 50. The Indus is crossed at Atank by the railway bridge, opened in 1884, a bridge of boats, and a ferry. The main railway from Peshawar also crosses the river by a railway on the railway bridge.

After leaving Atank, the Indus flows almost due south forming the western boundary of the British-ruled to the South of India. The great north canal from head to tail runs for several hundred miles parallel with the western bank, and from Mahwal Kot to Atank the Sindh Nigal Nala, and Khair Abad (junction of the North Western Railway) run along its eastern bank. Twelve miles below Atank, the Indus receives the waters of the Haroh, a small stream which, rising in the Himalayas in the Thamsi mountains, flows down from the Malakand Range, and rushes through steep gorges for a total course of 100 miles. At Mahwal the Indus is high in all the channels of Malakand, and the water is so hot in the lower part of the Malakand Districts of Dera Ismail Khan in the North West Frontier Province and Ching Khair Khan in the Punjab, with the sun, Nigal (high up its eastern bank) into a narrow strip of high grassy land between it and the hill country of the Malakand Range in the west. Just above Mahwal, in the north of Dera Ismail Khan District, it receives the accumulated waters of the Punjab. It is very high in the Punjab, the first is there the first great stream from which the Punjab takes its waters, the five waters¹ taken by name. These are the Indus, the Jhelum, the Ravi, the Beas and the Sutlej. After receiving them, it goes on to form the Indus, the river of the Punjab, which flows for a short space the boundary with the British Raj and the British Raj State, and waters with the Indus near Multan about 400 miles from the sea. In the night between the breadth of the Indus above the confluence is about four miles, its velocity 4 miles an hour, its depth is 10 to 15 feet, and its estimated discharge is 100 to 25,000,000 cubic feet per second. In day flood, with the frequent swiftness over which it flows, and the high water, not 100,000,000 feet per second. The formation of the Indus above the point of confluence are somewhat less than those of the Indus during the night, which is a great by the Indus, but they are almost as large as the Indus. The whole course of the Indus through the Punjab is broken by islands and sandbanks, and is full of

weedy is afforded along its banks which abound with the date, acacia, pomegranate, and other trees.

Mithankot has an elevation of only 200 feet above the level of the sea. From Mithankot the Indus forms the boundary between the Punjab and the Baluchistan State and, near Kashmore it enters Sind, at 26° N. and 69° E. From Mithankot to Sind is the longest yet unknown distance across the Siwalik as far as the sea. The river *Pha* (one of *Indus* former *Sindh* appendages) I first touched Sind here at Kashmore common to the Upper Sind Frontier District, separating it from the Baluchistan State and Sukkur District. It met me on both a high mountain on its frontier and immediately beyond it was the river in the plain of the lake. To prevent this, the Baluchistan Government which is the largest in Sind, was obliged to leave Kashmore the river crosses Sukkur District divides District and Karachi from the Khayran State and its Jeddah District leaving empty itself for many months into the Arabian Sea near Karachi after a south western course of 400 miles through Sind: it ranges in width from 200 to 1,000 yards the average during the low season being 500 yards. During the month of May the water runs with a moderate velocity, about 10 to 20 feet. The water, derived from the waters of the Hindu Kush, is of a dirty brown color and slightly tinged with yellow impurities consisting of mud, and minute of mud. Its velocity in the dry season averages 4 miles per hour at ordinary times of water. The discharge per square mile varies between a minimum of 10,000 and a maximum of 120,000 cubic feet. On an average the temperature of the water is no lower than that of the air. Near the station of Sukkur and again at Karachi the river is crossed by a fine railway bridge. The Sukkur bridge was 1,000 feet in length and resembles the Perth bridge in having a single girder with a span of 200 feet in position at the ends of a railway bridge 2,500 feet long. The Indus begins to rise in March attains a maximum depth and width in August and subsides in September. The maximum rise of 100 feet at Karachi near Hyderabad was 22 feet 7 inches in 1866. There are many other gauges on the river.

The delta of the Indus covers an area of about 100 square miles and extends along the coast for 100 miles. It is almost a perfect even, and nearly destitute of embankments the tamarisk and mangrove alone rising here and there. In these respects the delta is similar to that of the Nile but dissimilar from the larger delta. The marshy portions contain good

pasture, and rice grows luxuriantly wherever cultivation is possible, but the soil generally is not fertile, being a mixture of sand and clay. In the highland districts are extensive deposits of sand. The climate of the delta is cold and raining in the winter months, hot in the summer, and during the flood season of heavy.

Jhelum (Jhelam) River in Kashmir and the Punjab, having the most westerly of the five rivers down which the Punjab derives its name. It was known to the Muhammadan historians as the *Bihai* which in *Behatala* a corruption of its Sanskrit name *Jidhata* which Alexander's historians translated into *Hidaspes* but Ptolemy more correctly as *Pudaspes* while its modern Kashmir name is *Jidā*. It may be said to have its source in a south spring of drop blue water which issues from the bottom of a high steep of a mountain spot. The spring is known as *Verdā* and at *Karnatal* 5 miles north its waters join the stream of *Atap* River and *Haridra*, and leave the starting point of navigation. The river is no longer without a bright rock from *Kharabha* to *Baramulla*, 400 miles. In its course to the *Chakra* Lake which empty is regarded as a delta of the river the fall is only feet in the first 30 miles and 45 feet in the next 25 miles. From the *Wular* Lake to *Baramulla* the fall is very slight.

The *Jhelum* river has many tributaries. On its right bank it has on the *Chakra* of *Lambani* which comes down from the mountains across overhanging the head of the *Jidhar* valley and from the mountain side of *Tarai*. *Baram* belongs to the point of the marriage of the two rivers. The *Sand* river joins the *Wular* and from the *Wular* Lake the *Pishan* stream which drains the *Chakra* valley merges in the great river. On the left bank the *Chakra* tributaries are the *Yidhar*, the *Rembhar*, the *Karnali*, the *Dudganga*, the *Suknā*, and the *Ferozpur*. The *Chadganga* joins the *Jhelum* at the lower end of *Wanaga* city.

Near *Baramulla* 1000 feet the place *Jhelum* leaves the fertile lands of the valley and rushes headlong down a steep gorge between lofty mountains of the *Karnali* range on the north and an extension of the *Pir* range on the south to *Kidā*, 2,000 feet. At *Wanaga* the *Kishanganga* river joins the *Jhelum* on its right bank, while a few miles lower down and on the same side the *Kunz* river which drains the *Marra* country adds an considerable volume of water. Between *Kidā* and *Baramulla* there are many bridges, but between *Baramulla* and *Chamel*, where the *Kishanganga* river

District. The Tin joins it almost at once and the first place of importance on British territory is Waurahad where the Alexandra Bridge carries the North Western Railway across the river. Throughout its course in the plains the river flows in a wide and shifting bed of sand. A few miles south west of Waurahad the main branch of the Lower Channah (also takes off at Khatwa) and thence the river flows on great sand-banks in bulk along the Channah on the west from the Khatwa Jodi in the east until the Jharan joins it in Jhang Jhat at Tarnawa. Thence the two rivers flow under the name of the Channah till joined by the Khatwa near Nuhia and the Jharan at Madanla. The North Western Railway crosses it again at Sher Wala. Thence the united stream flows on under the name of the Channah, to near the station at Madanla. Small boats can navigate the Channah in the plains all the year round, but there is little under glass Channah.

There is evidence to show that the Channah flowed to the east of Madanla as late as 1149. The first then occurred an old bed passing Enghuwa and the former Channah and Khatwa north east of Madanla and flowing to the east of Bad town passed the bridge 10 miles south of it and east of Loh. Thus Madanla and Loh town are on the headwaters Channah. By 1497 the Channah has altered its course westward and now flows to the west of Madanla, as it still does. The part of the river which divides the western Jharan of Loh from Loh. This was known to the Mahomedan historians as the Sarhad (frontier) from the town of that name on its left bank.

Water Lake. Lake in Kashmir State long between 34" 10 and 34" 24" N and 74" 11 and 74" 24" E. at an elevation of 9,300 feet above sea level. The lake has an area of 12½ square miles, but in years of flood, such as 1833 it may reach to 3 square miles. The Water has a bad reputation among the peasants of Kashmir, for when the early rains drive the mountain gorges, the great surface of the lake rises and a sea of red gyres and rapids dangerous to the flat bottomed craft of the country, the name is supposed to be a corruption of *Shah* (harbour) for harbour on the lake with high growing water. The ancient name is Mahiyandharana, derived from the Sanskrit Mahiyandara, which is harder in the lake as it is any depth. The Kashmiri Mahiyandara. From streams flow into the lake from the high altitudes of mountains on the north, while from the south the bottom rises through marshes and peaty mountains. In the north-east corner is an island made by long *Salix* thick as a stone 150 feet long, and on the

western shore in the shape of Warab in which stands the celebrated shrine of Bramadatta. The chief products of the lake are fish, wild fowl, and the myriads of ducks.

On! Lake. Lake in Kashmir State extends from Srinagar, measuring about 2 miles by $1\frac{1}{2}$, and one of the most beautiful spots in the world. The mountain ridges which are reflected in its waters go on a matter of 2 and 3000 feet, the trees and vegetation on the shores is of the best kind of expanse fertility. In the spring the fresh green banks of the river and the mountain sides are interesting to the eye and it is perhaps at this time that the colours of the lake are most harmonious. The willows hang from green to silver grey and delicate reeds, with a red hue on the stems and branches, making patterns on the clear water of the lake which contrast most immediately with the rich blues and perfect greens of the floating masses of water weed. The shores are quite rich in woods, and the pines stand up like giant palms to the sky. In the foreground where the river flows and gold, and the water is one of deep, warm blue, green. Looking towards the sea from the lake the houses on the lake's banks resemble stupas on the left and to the right the hill of Hari Parbat with its picturesque battlements of construction of the grandeur of past times. Between these hills are Srinagar, and west to the west are the snow-capped mountains of Kashmir. The lake is calm and the people say that the shores of Kashmir speak out of their existence in every aspect of its soft waters. Nature has done greatly for the lake but the Mughal emperors carried themselves to enhance its natural beauty and through the terraced gardens of Jaldote and Nishan, with the green water of channel through which flows, gardens from the edge of the lake, may not praise the Emperor's hands are gardens, the Emperor's planter trees which the great Mughals have wanted to properly have added a decorative harm. The park of pleasure trees known as the Nandri Bagh, the garden of flowers, which was divided in Akbar's time in the most beautiful of all. Nothing is perhaps more striking than the round Pari Mahal standing grandly on a spot of the Jaldote mountain, which was built by Jai Singh who has taken Shalimar where there is at Mahabharat Bagh near the entrance of the Badami river. There are two well-known islands on the lake known as the Nishan Islands or Nishan and the Raju Islands or Nishan. The origin of the name has a meaning. One authority states that the name signifies in the Kashmir language lake and that there is a Persian word, *Lake* which means still. In the terms of

Whereas the lake is called Dal, the cultivation on the lake is peculiar and interesting.

Ladakh. The most westerly province of the high mountainous land spoken of as Tibet is called Ladakh or Lido. It is now politically a division of the Kashmir State lying between the Himalayas and the Karakoram mountains, and between Kashmir and Kutch Tibet. The Karakoram range forms the northern boundary as far west as the Karakoram pass. The country is known to educated Europeans by what means. Marten, Nemo, Marten.

Ladakh is one of the most elevated regions of the north. Physical
 Its sparse population ranging from 4,000 to 14,000 feet. The Physical
 scarcity population is found in scattered and isolated valleys,
 where along the river banks and in alluvial plains crops are
 raised by irrigation. (Central Ladakh, which lies on the Indian
 valley is the most important division of the country. To the
 north is Nubra, consisting of the valley of the Nubra river and
 a portion of the valley of the Shyok. The great divide of the
 Ladakh, caused by the descent of glaciers across its stream and
 that of the Shyok and the consequent descending flow of the
 Nubra river have ~~caused~~ caused destruction to riverain lands,
 once cultivated but now squares of granite land. Here the
 fields are located; to guard the crops from the perils of robbers
 on their way to Yarkand. The south is the Hunza country
 with its great lake. Rapsah Lake covers an area of 40 to 70
 square miles. Its width is 11 miles in length, and lies at an
 elevation of 14,000 feet. The lake is iceberged and
 beautiful. East of Central Ladakh is the lake of Panglung,
 and in its neighbourhood crops of hardstem barley and peas
 are raised at an elevation of 14,000 feet. South west is the
 country of Dikhe with a very severe climate chilled by the
 icy snow ranges.

The flora of Lachish is scarce, and timber and fuel are the main products of the region. The *Juniperus Libani* is a low growing bush which gives a fine fuel and up the high valleys is dense growth of forest, in forest. On some low slopes the pine (*Pinus*) occurs, and on occasion, among the wild willow is found. Architecture used to be done quite different under the impact, on the ground that trees degraded the land of fertility.

In the place up to 1 mile but not above of being (Equisetum, Arthropods, arthropods, Pteridophytes, Arthropods, and yak (the grasses) there (above others) and several kinds of wild sheep (see Arthropods, 1) and 2) and 3) and 4) and 5) and 6) and 7) and 8) and 9) and 10) and 11) and 12) and 13) and 14) and 15) and 16) and 17) and 18) and 19) and 20) and 21) and 22) and 23) and 24) and 25) and 26) and 27) and 28) and 29) and 30) and 31) and 32) and 33) and 34) and 35) and 36) and 37) and 38) and 39) and 40) and 41) and 42) and 43) and 44) and 45) and 46) and 47) and 48) and 49) and 50) and 51) and 52) and 53) and 54) and 55) and 56) and 57) and 58) and 59) and 60) and 61) and 62) and 63) and 64) and 65) and 66) and 67) and 68) and 69) and 70) and 71) and 72) and 73) and 74) and 75) and 76) and 77) and 78) and 79) and 80) and 81) and 82) and 83) and 84) and 85) and 86) and 87) and 88) and 89) and 90) and 91) and 92) and 93) and 94) and 95) and 96) and 97) and 98) and 99) and 100) and 101) 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the higher hills shows up to 24,000 feet various grass and marshes, and the beautiful snow-capped *Parvatis* and the *Yam Pithas*. Knight, in *His Two Empires* most remarks —

Not only can but also all creatures under his dominions
To dark steep crags, which are inaccessible here or there, he
Will ascend, in the high mountain air of a garden air.

I have counted no more than 20000 in a 2000 march. In outward appearance the dog is like a wolf, or an otterdog with white under fur and a dark stripe down the back, but no trim on the shoulder. One dog shot by me was 5½ inches in height. The flesh is rather like beef. They are common on the *Changthams*, and are met with in many parts of *Ladakh*, where their curiosity often distinguishes themselves by staring game worth shooting. A curious fact in the fauna of *Ladakh* is the absence of birds as they are parts of the country. An occasional raven is the only bird to be seen.

Climate.

The climate is very dry and healthy. Rainfall is not nearly slight but the dry season from November, and sometimes the full is heavy. There is a remarkable degree of thunder and lightning. The air is penetrating, and all travellers notice the extraordinary extremes of cold and heat. In *Kashmir* the thermometer falls as low as 9° in September. The maximum temperature of the month is 53° and the mean temperature 43°. As Knight remarks

It is thus not devoid of moisture in the atmosphere that the various degrees of temperature are experienced, which is expressed in the sun's rays may be too hot for us, but is not so for some time that it is freezing in the shade. I am suffering, on both sides of the neck, and in joints, by cold in the winter, which is almost insupportable here.

History.

The history of *Ladakh* and its conquest by King *Singh* in the first half of the nineteenth century is intimately connected with Tibet, with which country it still holds commercial and religious relations. Stories are told of missions in the seventeenth century to the neighbouring *Tibet* to purchase astronomical instruments required. At the end of the eighteenth century the emperor called on the aid of the governors of *Kashmir* to expel the *Wabsons*, a *Magyar* tribe. It was promptly given, and the *Wabsons* were driven out of *Ladakh* after which it paid tribute to *Kashmir*. From 1792 to 1819 by the English, the government of the country was a paid form of tribute. The rule was a very bad one, but the rule, which treated the *Wabsons* as a *Wabson* tribe, was not

church on the latter was the sub-spread authors of the monasteries. The chief of these is Hema, unique on the whole bank of the Indus, 18 miles above Leh. This monastery, which remains 400 to 500 yards and more, stands at the head of a wide glen and covers a considerable space of ground. An important festival, called the Hema, attracts to this monastery on the tenth day of the fifth month about 100,000 when the whole country goes back to the monastery and menses the great devotional of the Buddhist Ladakhs. A famous script is the Lushy of Ladakh. The monastery is believed to contain great wealth and the treasure is kept under guard in order to prevent its being carried over the border to India. The hard stone is faced outside with silver plate. Its treasure-house has small vases filled with pearls, turquoise, and rubies, said to be of value.

Leh, population, 2,000 is the only place of importance in the Ladakh and there are besides only villages. It is the exception of one village of Shugh (Shugrude) in (Chitral) and of the Argon or Badkunda, particularly the whole population, evening the town of Leh, is Ladakhi. The people are themselves known. Arrived up to the last scene, there are some Jewish settlements living in Ladakh. They have the Mongolian cast of features and are strong and well made, tall, but have few and good tempered. If there do quarrel over their higher level (though no bad blood remains afterwards). They are very truthful and honest, and it is said that in case the accused or defendants will sign an affidavit about his guilt or acknowledge the guilt of the crime.

There are five main cash crops: the figural side or rice, the Tangany side or potato, the dry side, or high cereals, the Huang side or lower cereals and agricultural crops, and the Fidelity side or withers and sorghum. This last side, also known as Bema, is considered inferior.

The Ladakh may be divided into the Champs or meadows, the high pastoral regions on the upland valleys, too high for cultivation, and the Ladakh proper, who have settled in the valley and the side valleys of the Indus, all saving with great are every patch of cultivable ground. These two cases do not, as a rule, overwaters and Champs rarely furnish returns to the monastery. The Ladakh are most engaged in agriculture and in spite of the aridness of their holdings they are fairly prosperous. These great wants are fuel and timber. For fuel they use coniferous and the bush known as *Arbutus*. Their only timber trees are the

waterted and many willows and poplars which grow along the watercourses.

There are no truly joint families in the mountain provinces of Kashmir. It is due to the practice of polyandry which acts as a check on population. Whereas the Hindus, used to the extremes of temperature are able to seek enjoyment in hot countries, the Kashmiris are not so fortunate if they ever get away from their mountain home. In a family where there were many brothers, the younger ones could neither marry nor go abroad for business. When the eldest son married, he took possession of the whole estate making some provision for his parents and unmarried sisters. The eldest son has to support the two families and him in age who share his role. The children of the marriage regard their husbands as fathers. If there be more than one daughter, the eldest may get married to a Brahmin, the next to a Kshatriya, the third to a Vaishya, the fourth to a Shudra, and the fifth to a Maggot. A man is not allowed to marry his daughter upwards and his sister has two husbands and some have as well with a small customary provision. The Maggot husband is then always at hand, as the husband can divorce him without any reason or ceremony of divorce. When the eldest dies or becomes a Brahmin, the next brother takes his place. But the wife provided here are not children, are got rid of his brothers. Now take her degree to a third as he is got rid of his brothers. Now take her degree to a third as he is got rid of his brothers. The third is brother and she is divorced from the second and he may say brothers. The woman in Kashmir has great strength and power. At an age she lives, she is the mistress of her husband. Then, she had a very intimate knowledge of Kashmiri habits that got rid of her has had a bad effect on the women making them nervous and phlegmatic. But others who are equally entitled to form an opinion, consider this an undue view.

In the town of Loh are many families of half-castes known as Argons, the result of the union between Kashmiri women and Kashmiri Turk. These are known as Argons. The Argon children were known as the Argons and were known to the State. The half-castes of Loh are no more unsatisfactory as I at that time and many travellers have testified to the good qualities of the Argon.

The mountainous country plays an important part in the life of the Kashmiris. Nearly every village has its monastery generally built in a high place difficult of access. As the country is very fertile, sometimes worked by water

power, and inside a courtyard is a lofty square chamber in which the images and instruments of worship are kept. No women may enter this chamber. Every large family sends one of its sons to the monastery as a *Lama*. He goes young as a pupil, and finishes his studies as a *Lama*. In a monastery there are two head *Lasas*, one attends to spiritual, the other to temporal matters. The latter is known as the *Chagyal* or *Aspa*. He looks after the revenue of the lands which have been granted to the monastery, carries on a trade of butter with the people and superintends the alms given to the villagers. He also enters into money-lending and grain transactions with the surrounding villages. Many monasteries receive subsidies from *Lhasa*. The *Lasas* wear a shaggy gown dyed either red or yellow. The red *Lasas* predominate in Ladakh. The red ones known as *Deukpas* are not supposed to marry while in the priesthood. Numerous are frequent, found near the monasteries of both sects, but the *Chamas*, or monks of the yellow sect, have a higher character than those of the red brotherhood. About a sixth of the population of Ladakh is absorbed in religious houses. The *Lasas* are popular in the country, are hospitable to travellers, and are always ready to help the villagers.

There are two missions at Lath, the *Mission* and the *Chagyal* *Mission*. The *Mission* Mission is an old and excellent institution, much appreciated by the people for its charity and devotion to cases of orphan. The *Mission* has a little hospital, within the *Ladakh*, where even suffer from the climate of the air and the *Mission* is at the same time in good nature.

The soil is sandy and requires careful manuring, and nothing grows but the raised natural vegetation. The chief crops are wheat, barley, ^{barley} heartless barley, peas, rapeseed, and beans in the spring, high wheat, millet, and turnips in the autumn. *Ladakh* grows of grown for fodder. The surface soil is frequently renovated by top-dressings of earth brought from the hillsides, and it is a common practice to sprinkle earth on the snow in order to expedite its disappearance. Fruit and wood are scarce except in villages situated on the lower reaches of the *Ladakh*.

Barley grown is the most useful crop, and can be grown at very high elevations, 10,000 feet. In the middle of Ladakh the crop is secure if there be sufficient water, and in the lower villages the soil is cropped twice a year as there is ample sunshine, but in *Ladakh*, which is near the high snowy

range, the crops suffer for lack of sun warmth. Ploughing is hardly done by the bullock of the yak and the various deer known as *su* (male) or *suwe* (female). The animal is also used for transport purposes. Grazing is limited, and consequently the material of sustenance is not large, yet there are a few varieties of grasses, those from *chabils* being famous. The basis of the Ladaikins is the meat of game, made into a *batshi* and dried warm, or else into a dough and eaten with butter milk. The Ladaikins have no preparation, and as and any way they can get.

Minerals. Rush is produced in Rupnisi, and salt is found. About 4,500 manikins of beads are annually extracted, but the industry is probably nearer to the people up to the beads. In former days sulphur, as opium and iron were manufactured in Ladakh, but the scarcity of fuel has now retarded these industries considerably.

Manufactures. Practically the only manufacture is that of woven cloth known as *patto* and *pothana*.

Commerce. The people trade in agricultural products with the Thangpas of Tibet and with *hikandis*. Salt is largely exported to Sikkim, and to a less degree to Ladakh, and is exchanged for grain, silver, tobacco, muslin, and ponies. The chief commerce is the Central Asian trade between Sikkim and India.

Administration. Ladakh is under the charge of a *Wazir* Waddat who is resident near the *Barat* and the three *hikandis* of Ladakh, Kargil, and *hikandis*. His duties are light. There is no time and scarcely any legislation. The chief *Wazir* are disputes regarding trade or companies that one *Wazir* has done the work of another. No justice lower is maintained, but a small gathering of *Wazir* through a *Wazir* in the form of a building with mud walls. The *Wazir* Waddat has his residence at the *Wazir* Waddat *Wazir* *Wazir*. This is the chief headquarters of the *Wazir* is the supervisor of the Central Asian trade which passes through Ladakh. For this purpose he is an officer of the Government associated with a British officer appointed by the British Government. Each subdivision of Ladakh is in the charge of a *Wazir* who is a *Wazir*. His chief duties are to see that all reasonable assistance is rendered to the Central Asian traders and travellers. For this purpose the villages of each *Wazir* are made responsible for furnishing baggage animals and supplies in turn, and according to the capacity of each village is the stages situated within the limits of the *Wazir*. This is known as the *Wazir* system. Primary schools are maintained at Sikkim and Ladakh.

The land revenue system in the past has been of a very ^{Land} arbitrary description, the basis of assessment being the holding or the house. The size of the holding or the quantity of the soil receives little consideration. Taxes collected are perhaps not heavy though the rates are considerably higher than those now applied in Baluchistan but no incidence has been so far oppressive to the poor and very easy to the rich. A redistribution of the old assessments on a more equitable principle, and a summary revision where the assessments were obviously too high or unduly low, have recently been carried out by a British official sent to the place. The greater part of the revenue is paid in cash but some is taken in grain and wool, which are necessary for the supply of the Great Afghan caravans. The grain is stored at convenient places in the Larikan route in the charge of officials who sell to the traders. But for this system trade would be hampered, for since leaving the Nubra valley and crossing the Karakoram range no fodder is available on the Tibetan road till beyond which in Chinese territory is reached, and grain for feeding animals must be carried from Nubra. The strain of travel across is heavy in Ladakh. Not only is much transport taken for individual movements, quantities to the trade route, but several caravans are allowed to transport goods and animals for trading purposes.

Agricultural advances, chiefly seed grain, are made by the State, not by the merchants, and the poorer classes are kept in debt to the rich on conditions. There are no harsh rebates. When the debtor is hopelessly involved the moneylender takes possession of half of his land for a period of three years. If the debt is not liquidated within the years, the land is returned to the debtor and the debt written off. The moneylender will never use a debtor's land ever permanently alienated for debt.

Baluchistan. A tract under the Wazir Warrent of Ladakh lies in Kashmir from 27° 30' to 28° 30' N and 74° 30' to 75° 30' E. It is bounded on the north by the Murghab range and Nagar on the east by Ladakh on the south by Kashmir Wards, and Fajar and is the west by Gigit and Sora. The tract is situated in the midst of enormous mountain ranges with peaks of 25,000 and 26,000 feet, and one above 27,000 feet, and glaciers which are the largest known out of Polar regions. The villages cling to the river valleys, the most important of which are the Indus, the Shyok and the Sagar, together with the Diras and

Suru rivers which unite near Kargil, the Trakia and Bashir which join the Shigar and the Hadie and Saktara which join the W. A. and above Kisapala, one of the most fertile oases in Hindustan.

Botany. There are no forests of any kind or value. *Quercus* and *pinus* grow in clumps on the hills. In the villages and along the roadsides, where water is available poplars and willows, as well as fruit trees, grow freely. In the hill-sides and great naked land *Juniperus*, *saxifraga*, *trifolium*, and *anemone* are gathered by the people.

Climate. The rainfall is eight to ten inches in the year and the air is dry and freezing. The snowfall is often considerable, and is of great importance to the villages which depend on the snow for their irrigation. In which and beyond snow remains from the middle of December till the middle of March. In Kulu snow rarely lies. The land is warmer than of the rivers freeze and from natural traps superior. The night frosts in the hills, and there are many villages which the frost says do not open for more than an hour daily. The climate in the spring and autumn is mild but in July and August the heat in the villages on the border is very severe, especially in the sandy places of Sharda and the narrow rock-bound valley of Kulu.

History. The old rulers of Hindustan, known as Rikhs or Gulpas, trace their descent from a ruler. One of the most famous of the Gulpas was Ali Sher who lived about the end of the sixteenth century. He completed Jammu and built the fort on the rock at Sialkot. Around Sialkot was the last of the independent Rikhs. His fort was captured by the English general, Colonel Bugh in 1840, and he himself accompanied Jammu Bugh in his ill-fated expedition into Tibet, and died in captivity near Lhasa. Several of his most relatives were deported as political prisoners to Kashmir where their descendants still live. The present Rikhs of Hindustan have long recognized power but the people still look up to them with respect, and have evaded their authority ever since.

The People. The Rikhs are of the same stock as the Ladakhis. They have Mongolian features, high, bushy noses, and eyes drawn out of the corners, but the nose is not so depressed as in the case with the Rikhs of Ladakh. There is very little difference between the Rikhs from the Ladakhis save the structure of the jaw but they are perhaps lighter in build and size. They are good natured and patient and are devoted to peace. In spite of much oppression, they are a merry, light-hearted race.

cattle, and then either spade labour is employed or the ploughs are drawn by human beings. The plough is light and is made secure of wind. The chief spring crops are wheat, barley, barleian barley, green peas, beans, and lentils. While buck wheat (*Triticum monanthum*), and damru (*Setaria indica*) are the most important of the autumn crops. Turnips are also grown as a following crop after barley and peas. It sows in the higher and colder parts, or where manure is deficient, the land bears two crops each year.

Green land, waste at one and difficult to cultivate, is set high up the sides of steep hills above the cultivation proper of the village, and known as *adab*, is reserved for growing higher grasses, chiefly lucerne. This is always squared, fenced, and carefully looked after.

The soil is light and requires little ploughing. The time for sowing depends on the season and when sowing time has come it is at once cleared by turning up earth over it. Amongst other precautions of cultivation in Kashmir may be noticed the large amount of vegetation given to spring crops as compared with that given to autumn crops, the practice of rooting out the crops, instead of cutting them, the little preparation given to the soil after the spring crop has been harvested and before the autumn crop is sown on the same land, and the great absence of manure crops. In some villages good tobacco is grown. No crops can be raised without manure. As a rule eggs and fish are stored in the house, and mixed with the dung of all the human creatures. The latter is always collected in small water earthenware. The dung is stored out in the spring in baskets and spread thick over the land. Fruit or any article may cause a failure of crops.

Fruit plays an important part in the economy of the Ratta. The gardens are cultivated, and are largely exported to Kashmir and the Punjab. The dried fruit and the kernels are both in great demand. The traders pay large sums in advance for the crop. Mulberries are of importance of food. Apples are exported. Finest pines, in quantity hardly surpassed by the best English fruit, and good grapes, quinces, and currants are common.

Minerals. Coal washing is carried on in many places, and a kind of petroleum, and gas from it the produce from its source. The basic charge for a tonne for good washing is Rs. 10. In Kang is the southern of the valley the good industry is of great importance and for the most part the sand is excavated high above the present river level. The present author

wasting are wasteful, and with better appliances the industry might give a large return. Arsenic is not worth sulphur amounts. It goes in fumes in B-side, and while more often in several places, but is not collected.

There is very little trade. Ten, cash, sugar and rice are commonly imported, and there is a small business in salt from the dock. The most considerable export is that of sugar and apart from a few, but common, are also exported. Cashew A special manufacture is a very fine black cloth (poco) (poco) giving the cloth of black and white. A variety of the same kind, a green cloth and like an interior jacket used in the sugar cane and small shops are made of it, and a cashew and the pump is used as an substitute to wood and as a coating with on the ground.

(The mountains are of the sandstone kind, and many peaks particularly sharp in round masses would add greatly to the contrast and grandeur of the hills. Several routes connect Badinier with Kashmir, Ladakh, and Tibet and the dangerous track leads to Lhasa. Of the Kashmir route, one passes over the snow plains. There is an elevation of 15,000 feet, and are surrounded by a ring of lofty mountains. For most of the route they are under snow and on the mountain the road is right in a straight line. The snow and plains are mountainous stretches of grass and stones, with snow a long climb up to camp, and unhabited by the the mountain, as is several times and burned by the high peaks. The absence of wood for fuel, the difficulty from human habitation, and local requirements regarding the sheep and goats prevent the people from using the pastures of Dugma.

Bahá'ís have recently been placed under the charge of administrative officers of the Ministry of Lands. His formal decision was the Ministry of Lands and Bahá'í. Both Bahá'ís have recently been settled by a Jewish culture and it is possible that the long suffering and patient Bah. was kind to him or dare. The Bahá'ís of 1934, still existing were suddenly met the people and a definite sum out of the several other has been abandoned in favour of each family. The total land revenue assessed at the recent settlement of the Bahá'ís of Sadr and Bahá'í was 14 lakhs. Of this about a fourth is taken in hand.

GUGUL.—Himalayans; a supposed descent of Waziristan of Punjab. The Kushin is State situated on 31° 35' N. and 68° 15' E. at an ¹⁰⁰⁰ elevation of 4,000 feet above sea level. The Waziristan stretches south to Astor and the northern slopes of the Buzurg mountains.

the Astor river to its junction with the Indus, and then runs north along the Indus to Bura. It was once a flourishing tract, but has never recovered, from the great flood of 1841, when the Indus was blocked by a landslide below the Halu Mir, and the valley was turned into a lake. Opposite Bura, in the valley of Bura, and 6 miles farther up the right river falls into the Indus. Tigh is about 24 miles from the Indus, and has a considerable area of waste or good land. The Wabral river enters the tract known as Hargah on the right bank of the Indus, and numerous valleys leading down to the river run. To the north the boundary reaches Chashim on the Mursh road, and up the Hargah valley as far as the Braich Mountain to the south in the direction of a hill. From Tigh up mountain trails lead into the surrounding valleys, and its geographical position, such as at various times, renders the hill on the right bank of the right river an important place. A suspension bridge crosses a small creek in the left bank of the river at Bura, and the right bank is built up the mountain side of the river under the Hindu Khil was Barga. Tigh is was known as a hill, which the Hindu and English occupied into Tigh but to the country people is a mountain side, as said of Barga hill. It lies on the most mountainous region of the Himalayas. Within a radius of 45 miles there are eleven peaks ranging from 11,000 to 15,000 feet, seven from 10,000 to 11,000 feet, one from 12,000 to 14,000 feet, and eight from 14,000 to 15,000 feet. A few hills are mountainous are barren and rugged but at 7,000 feet there are few kinds of vegetation and at 11,000 feet up there are some kinds of all vegetable growth in every other valley of glacier and eternal snow.

Bura

The forest cover is found from 14,400 feet down to 6,000 feet, and sometimes reaches a growth of 30 feet. There are no grass between 9,500 and 12,000 feet. The entire part is covered in Astor, ranging from 7,000 to 10,000 feet. The useful tree here is a variety, and grows as high as 15,000 feet. The mountain top is in the lower valleys up to 6,000 feet. Right up the river, the upper limit of vegetation found is 10,000 feet above the rocks are covered with 10,000 feet.

Bura

Here are found the deer and musk deer, and also the red deer (Cervus) and three deer for the mountain deer (Cervus) and occasionally the wild dog (Canis) and the red bear (Ursus) and the musk deer (Moschus) and the grey partridge are common and many of the migratory birds of India and some,

and are: equal, pass up and down in the autumn and spring. Not in the spring, in the lower and more fertile hills, neither are flocks of wild sheep. The regions and mountains are well with

The climate is healthy and dry. At night such a winter climate very cold, and some seasons less by more than a few hours. In the summer it is but owing to the mountain from the high mountains, but it is not compared with the climate of Kashmir, India. The rainfall is very high.

The remains of ancient stone buildings and Buddhist History Carvings suggest that Gilgit was once the seat of a Buddhist or Hindu dynasty whose traces of established cities are given to the fact that the population in early times was far larger than it is at present. It is more evident the inhabitants of Gilgit have seen Muhammadans, and nothing definite is now known of the Hindu period. A certain source that he had of the Hindu king, but that, known as Islam, but the main point was killed by a Muhammadan conqueror. A founded a new dynasty known as Tashkent. No source is said to have extended to Tashkent, and the population of Tashkent is said to have spun up the kingdom into a kingdom of some states carrying on a traditional culture and movement slave-raiding. The Tashkent kingdom is now extinct though it is said that the present ruler of Gilgit has a right of son of Tashkent blood. In the early part of the nineteenth century we find Tashkent giving to Gilgit. It was killed by the ruler of Punjab, who in turn was killed by Lord Dalhousie, chief of Punjab. The Tashkent kingdom is now extinct, and it is said by another source, ruler of Tashkent is the independent history of Gilgit, and Kashmir. The history of Gilgit, as in the

history of Gilgit, is intimately connected with that of Kashmir. More than 300 years ago, when Mughals, a great conqueror is said to have founded a province of the Gilgit, embracing largely. The last was born of the union between King of Kashmir and Kashmir are intimately connected and from being are descended in line to the present ruler of these places. The independence of Kashmir seemed to the English conquest. The present ruler of Kashmir is the great descendant of Tashkent Mughals. The Tashkent rule has secured peace to the world, but it is not the long history of the Tashkent is very evident from the devastating slave raids of Tashkent.

The Mughal empire, the Mughals, and the population, the according to the census of 1901 is 10,000. The pressure on the cultivated area is great, the demand being 1000 persons per square mile. The people of Gilgit and Tashkent are

supposed if they were told that they were Dards living in Dardistan, and their neighbours of Hunar Nagas and Yabhs would be easily misled. It remained, they would probably clear the forest country as Kailasha, or the land of the Ashes where stood a the spoken language. They are not As an people showing traits of being honest, frugal, and sober. They are devoted to *gaut* and are fond of dancing. The inhabitants of their cast are four headmen, a bag of machine, both had a gun long which is called up, outwards of the ridge would get to the up to be comfortable. In winter, when the rain makes a protection from wind or from sun, nearly as good as a curtain. Their houses are small, with very small doors, and are usually built out from the mountain side. Wealth is the one consideration. The Avars have never very far from the mountains. These houses had they held the mountain. They are not doing such a much now as they have been doing the in a way that if he had and in a way which village he was not and from of him there. They practice agriculture for much part their one epidemic. The people of Hunar are Musalmans, the others being of the Hindu persuasion, and the rest being either Shikhs or Muslims. There is no religious intolerance in Avars.

When enumerating the following caste divisions: Barmis, Shinas, Yashikans, Kermis, and Jams. As regards the Barmis caste, he says that there are a small number of families in the district. In his father of the Hindu Avars states that it forms a part of the large population and that it is the most backward caste of all ranking next to Musalmans of the high caste of Dardistan. The members of the Avars belong to the Yashikan caste, and the Shinas are few in number under 1000. They are more numerous in the district. The total number of being, according to the census being 33. The Shinas are regarded with great respect by the Yashikans and the other castes. The Yashikans claim the Shinas as their forefathers. The Shinas give their daughters in marriage and to marry, but take wives from the Yashikans. For some of them, Lachik, as he says, they have other kinds of the Buddhist religion. They have retained the Avar name of the country where they came and its kind does not but they wear the pagoda and the Lachik up. It is said that though Lachik be name they are a fresh people and democratic. Their reaction may be that they are not at all the Tibetan Buddhists, and like the Shinas in Dardistan, they hold the caste as abjectly as

In Lachik, as in Avar, there are few social institutions, but

the people are forced to depend on themselves for most wants of life. The language spoken in Shina, though only a small percentage of the population is Shon. The religion is Islam, the Shukh sect preponderating. There is an entire absence of fanaticism. The national character is timid, and the men are unwarlike. The Lele is attached to his home and his family, and is an industrious cultivator. Both men and women are droopily built, and of a fairer complexion than the people of India. The women paint their faces with a kind of clay paste to keep the skin soft and to prevent sunburn. They are fond of flowers, and decorate their caps with daisies and roses.

The cultivation is of a high character. The fields are care-
fully tilled, heavily manured, and amply irrigated. In 1906
they grow rice in green and crops of wheat, barley, maize,
millet, buckwheat, pulses, rapeseed, and cotton are raised,
while fruit is plentiful. There is very little grazing land,
and cattle are scarce. Lucerne grass is largely cultivated for
doubler

In the cold dry climate of Astar cultivation is limited on to an elevation of 6,000 feet. It depends entirely on irrigation by tube channels known as *kirs*. The chief crops are wheat, barley, peas, maize, rice, and buckwheat. The people pay great attention to flocks and cultivate the income grain. Irrigation is precarious in Astar as the crops frequently do not ripen owing to the cold, and there are several vegetable fruits in the shape of berries.

Most of the streams are rich in gold, especially those which flow from Huashan and Nagar, and also the Indus above Chikla. Gold washing is carried on in the water chiefly by the poorer members of the population, though the work is often remunerative. At Chikla whole families live by the work. The gold is of fair quality the best being twenty carats. The Nagar railway is celebrated for gold washing, and contains many signs of mineral wealth.

The only manufacture is the weaving of smaller cloth (*galitsa*), *Cotton dress- and crêpe-* but this is for home use and not for sale. Trade does not flourish. The local markets are few, and the only sign of Gdansk becoming an important commercial centre lies in the opening of a trade route to Yarkand. The chief staple of export is silk. Russian cloth is brought down from Yarkand, and is said to be more durable than the European article.

The most important roads are those leading to India. The Kanchi-Chennai road, over the Bungal and Rajahmundry passes has been

described in the article on Kashmir. But at route 1, 600 feet lower at a distance of 500 miles from the present way lay the old Baramulla. An alternative line has been opened over the Helmand pass, which brings Jhelum within 200 miles of the Indus at Huzam Akhla. This new broader being shorter has the advantage of crossing only one main pass, instead of two, or actually three. If the winter snow at Baramulla be taken into consideration. The routes to the south are more tracks, which the military could cross more easily with the aid of the Ladakhs and Hunas have been joined.

Pass and
Telegraph
offices

There is a daily postal service with India by the Jhelum pass and Kashmir and the telegraph line follows the same route. Both serve as as well as spots of heavy snow and destruction elsewhere, and are maintained by the Government of India. There is a weekly postal service from Jhelum to Chhota and Rajpura, a telegraph line between Jhelum and Kashmir via the Kishanpur and the Miranpur and the Miranpur.

Army
troops,
etc.

The Jhelum Warden is in charge of a Warden's Office. In winter there is no post and no police service. Police duties are carried out by the Jhelum and a few soldiers of the Kashmir regular troops. There is little irrigation and the chief business of the Warden is the provision of supplies to the garrison at Jhelum and collected by an excellent system of transport from Kashmir. In 1902, at the time of the Hunza-Nagar expedition, the garrison had a force of 2,400 men, which the Jhelum Warden had to supply. It consisted of 2,100 men, the Jhelum garrison consisted of 2,100 men, the Jhelum garrison consisted of 2,100 men, the Jhelum garrison consisted of 2,100 men, the Jhelum garrison consisted of 2,100 men.

Land
revenue

A land revenue settlement of Jhelum and Jhelum has been made. It was found impossible to introduce a permanent settlement, owing to the heavy requirements in grain and means for the Jhelum and Jhelum were removed, and, on the whole, the revenue of the Jhelum is satisfactory.

Political
situation

A British Political Agent resides at Jhelum. He exercises some degree of supervision over the Warden of the Kashmir State and is also a representative to the Government of India for the administration of the Jhelum district of the Jhelum State of Hunza-Nagar, Ladakh, Jhelum, and Jhelum. The Jhelum report of the Jhelum, and also the relations with Jhelum and Jhelum over which Jhelum the Jhelum and the Jhelum of Jhelum have partly acknowledged as the Jhelum. These Jhelum acknowledge the Jhelum of Jhelum but have a part of its territory. They pay an annual tribute to the Jhelum.

Hunan-Nagar. Two small chiefdoms, lying to the extreme north-west of Kashmir on the banks of the Hunan river. Towards the north they extend into the mountainous region which adjoins the junction of the Hindu Kush and Sulaiman ranges; to the south they border on Turgai. On the west Hunan is separated from Chitral and Yasin by a range of mountains, while the Sulaiman range of hills separates Nagar from Baltistan on the east. The inhabitants of both chiefdoms are in the same stock and speak the same language, but are not used to one another's ways or customs. In Hunan the people are Muslims or Jinnahs, followers of the Aga Khan, while in Nagar they are ordinarily Shikhs.

Lying between these States and Turgai are Chagral and Chitral, but with minor attached villages, which were long a source of contention between the two States. In 1857 the ruler of Nagar, with the assistance of the Kashmiri Durbar, was finally expelled from the disputed tract, but in 1860 he was reinstated on condition his subjects, who were replaced by a garrison from Kashmir. In the same year Chaman Khan, the Khan of Turbat of Hunan, was murdered by his son Sakkar Ali, who succeeded him and presently submitted to the Maharaja of Kashmir. The two States continued in 1888, and expelled the Kashmiri troops from Chagral and Chitral, upon threatening notice, but both chiefdoms were reconquered by the Kashmiri forces after a few months.

A British Agency was opened up at Gilgit in 1849, and the British agreed to respect the control of the Agents to give free passage through their territory and to stop trading on the Sulaiman range and elsewhere, partly subsidies being granted to them, besides the amount paid by the Kashmir State. These engagements were not respected, and in May 1851 a caravan came from Hunan and Nagar threatened halt, but was pursued in the pursuit of reinforcements. Later in the year they refused to allow roads to be made to Chitral, extending to Gilgit, and it became necessary to dispatch troops against them. Nagar and Hunan were occupied, and the Khan of the former place submitted, while Sakkar Ali, the Khan of Hunan, fled to Jinnah Jinnah. The subsidies were withdrawn, and a British officer and his family have remained at Hunan till 1861, but in 1862 Muhammad Nizam Khan was installed as Khan in place of his half brother Sakkar Ali, while the Khan of Nagar was reinstated. In 1863 subsidies were again granted by the Government of India and the Kashmir State, and in the same year both States assisted in the relief of Chitral.

Lama Tshad Khin, Thon of Nagas, died in 1904 and was succeeded by his son Shinnagar Khin.

The *hu* of Hama, who claims Ranken and the Togh-dunshih Pinar north of the Harde & oth watershed, is permitted to exchange persons with the Chinese authorities at Kachgar but these exchanges are under consideration. Both States are neutralities as regards external affairs, and recognize the suzerainty of the Mahadja of Kashmir to whom they pay a regular annual tribute. They furnish horses for the service of the frontier and receive pay from the Kashmir State, and are armed with modern rifles, procured by the Government of India.

Baramulla. Town of the State of Kashmir situated in 34° 43' N and 73° 15' E. Population 100,000. Owing to its position in the lower part of Kashmir this is a place of great importance, but in consequence of the opening of the rail road from Baramulla to Srinagar the trade traffic in which the inhabitants chiefly depended has in many degrees fallen. It is situated on the left bank of the Jhelum, which is crossed at the east end of the town by an ancient bridge. The inhabitants are but the most part farmers and agriculturists. Baramulla is very healthy in the summer, and in 1886 it was made a resort for Europeans. The name is derived from the Sanskrit *Vara* Baramulla, which stood on the right bank of the river along which it had made down the Indian word to form Baramulla on the bank where the present Baramulla stands, was the town of Baramulla, founded by King Harsha in the 12th century when the present Baramulla. The site of the ancient Baramulla is about two miles to the south-east of the modern Baramulla.

Baramulla. Town of the State of Kashmir situated in 34° 43' N and 73° 15' E. about a mile from the right bank of the Jhelum, near the point where that river becomes navigable. Population 100,000. It has never an elevated table land, on the edge of which rises a central hill, overlooking the town. From its foot it is a long steep rising, the ascending a slope applied to the town by Hindus. There are numerous other springs, one of which the Mahadja is superstitious and its water is highly prized for garden cultivation. Many of the inhabitants are sheep owners, and a large number are engaged in agriculture. It is generally believed that Baramulla was once a large and prosperous place, but now there are few signs of prosperity or growth. The Mahadja has been much neglected, and this constitutes a danger to the health of the Capital, Srinagar.

Jammu Town. Capital of the Jammu province. **Kashmir Gate** and the winter headquarters of the Maharaja, situated in $32^{\circ} 40' N$ and $74^{\circ} 49' E$ at an elevation of 10,000 feet above sea level. Population 1901, 36,190. It lies high on the right bank of the river Tawi which flows at a sufficient distance to give the town a breezy air. The town covers a space of about one square mile, densely packed with single-storied houses of mud and stone and road with flat top. In the upper portion are numerous houses of brick, and on the island stand the Singh Sabha and the palace of the Maharaja and his mother. The general effect of Jammu is to bring, and from a distance the white-washed temples, with their gilded summits, suggest a spiritual which is dispelled on nearer acquaintance. The most conspicuous of the temples is Raghunath, but like all the other buildings in Jammu it is unimpressive. The Hindus have little taste in architecture and are essentially unoriginal and practical in their ideas of domestic comfort.

The railway which runs to the left of a distance of about 15 miles, starts from the left bank of the Tawi. The river is spanned by a low suspension bridge and a good cart road runs from the bridge as far as the March. The other roads are narrow and primitive and there is nothing of striking interest. Of late years the construction of water works, the opening of the cart road to the March, the suspension bridge over the Tawi, and the railway extension from Jammu have improved the conditions of life at Jammu, but there has been no marked response either in population or in prosperity.

In the present days of high finance, few towards the latter part of the nineteenth century it is stated that the population was 150,000. There is nothing in the geographical position of Jammu which makes for progress. It lies on the edge of the Maharaja's territory, with an inhospitable hinterland. High spending it should have kept the Maharaja in a constant state of debt, but the construction of the J. & D. railway has carried has taken trade away from the Jammu March route. At present there are hopes of the development of commerce to the south, which might bring prosperity to the Jammu capital and the railway projected from Jammu to Srinagar would revolutionise business.

The town is situated on a hill. It may be aptly called 'the city of temples,' as every traveller is likely to be impressed with them while approaching by road or train. The largest and the central place of worship is the temple of Sri Raghunath. The town was a great centre of industry at the time of the

State school badly burned, and a dispensary in a building wholly devoted to the purpose. The town has a neglected appearance. The streets are badly laid, dirty and unwatered, and there are no attempts at conservancy. Trade is brisk. It is mostly in the hands of Marajans and Jaisiris. The chief articles of export to British India are grain, gins from the hills and Panch, and market basket products from Koth, Panch, and Rigan. The chief imports are salt, cloth, tea and sugar.

Panch. From this place on the edge of the same name heads into State territory on 11° 45' N. and 74° 5' E. at an elevation of 3,500 feet above sea level. It lies on sloping ground above the right bank of the Jari. Population (1901), 1,013. The town is oblong in shape, and is paralleled, each side by streets. There are about 700 houses, generally single storied with flat mud roofs. The last, on which the Raj resides, stands on a mound about 100 yards from the north west corner of the town. Panch is well supplied with water brought by channels from the neighbouring streams. The climate is hot in the summer and the few birds in the neighbourhood are probably one of the causes of the prevalence of leprosy. During the five hot months it is the custom to migrate to the hills to the numerous camping grounds known as *thals*. There is a flourishing market and a large scale is done in grain and gins in spite of the fact that there are no roads in the district for rail traffic. A great artificial canal for gins transport has recently been completed from the town to Utrah the hills and there is a project for a road to Kumbhari, with a suspension bridge over the tributary of Lachman Pithar. Chief occupations are (1) land to Panchang and Tuh Maslin in Kashmir and to helms. The greatest grain was Panchang, and the use of this was traced to the Brahmins. The Kashmiri always speak of Panch as Pancha.

Wingman

Wingman. Capital of Kashmir State situated on 10° 5' N. and 74° 30' E. at an elevation of 3,200 feet above sea level. The city lies along the banks of the Jari, with a length of about 5 miles and an average breadth of 1½ miles in a few miles of the river. Originally houses were confined to the right bank of the river, and the site presents many advantages strategical and economic. It is not known when the settlement on the left bank took place but the royal residence was transferred to it in the reign of Ananta, 1010-53. Modern Wingman on the right bank occupies the same position as the ancient city of King Pravarasena I who ruled at some period of the sixth century. Ballana, in his famous chronicle, says that the

city contained 3,000,000 houses, and writing of his own times, he states that chrysos were numerous reaching to the clouds. Tahir Mirāḥ Haidar and Abu Fāḥ mention the lofty houses of Srinagar built of pine wood, and Mirāḥ Haidar says that the houses had five stories, and that each square contained apartments, halls, galleries, and towers. The city was created between the hill of Sankā, now corrupted into Śārī Parbat, and the tip of Lūga (Lūgahāṭ), now commonly known as Bāḥī Sūmūdān or Sūmūdān-haṭṭ. Beyond the hills lies the extensive Jīl Lake, the never-failing source of food as well as pleasure to the citizens. In Muslim times the Śārī Parbat was not fortified. The houses here on the summit are quite modern, and the fastened stone wall enclosing the hill was built by Akbar. There are various legends regarding the temple known to the Hindus as Śankāśākhā, which crowns the pine-wood peak of the Śārī Sūmūdān. The image of Lakṣmī is the object, but the image and high base of the temple is probably very old, and is associated with the worship of Jyēṣṭhadevā, to whom formerly the legendary King Jambūka built a shrine.

There are not many fortifications of note in Srinagar. On the right of the hill stands the abode of the modern power of the English rulers, where the Maharaja and his family live and the least officials work. The site was chosen by the British government for their fortified residence. Across the river is the finest place in Srinagar the Maṇḍāḥ Nāḥ with grand stone steps leading from the temple of Maṇḍāḥ Nāḥ to some of the most famous shrines in Kashmir. In front of the ancient buildings in the valley are towers of masonry, called from the old Hindu term *dhvaja*. Lower down on the right bank is the beautiful museum of Nāḥ Hemādī, one of the most sacred places in Kashmir. As usual it was built on the foundation of a Hindu temple, and a Hindu shrine is a niche in the stone foundation is still worshipped by the Hindus. It is surrounded of double walls, built in terraces. The platform has a staircase by a curved door capped with brass, and the four corners of the roof are finished by a kind of garbha with large stony wheels attached, a form of construction which obviously suggests Buddhist influence. Next in order to the Nāḥ Hemādī is the great temple, or Śrī Maṇḍā, a short distance from the right bank of the Dīḥ river, between the head of the river and the Śārī Parbat. This is a Śaivite building of more grandeur, with chambers about 100 pards in length, supported by grand pillars of double 30 feet in length, resting

from the falling off a beam. The first bridge, the Amiran Kadal, struck through it was submerged. But the second bridge, the Haveli Adal, succeeded and carried away the other five bridges which span the river. The old fashioned and picturesque Amiran Kadal has now been replaced by a handsome modern bridge. The flood of 1895 was surpassed by the yet more serious inundation of 1903.

The valley is liable to earthquakes, and since the fifteenth or sixteenth century when great earthquakes have occurred, all of long duration and accompanied by great loss of life. The last two assumed their most violent form in an epidemic form of which Srinagar and Baramulla were the focus. In 1881 the shock lasted from May 30 till August 14. There was a general panic and the people kept out of doors. Just at the time of harvest in Srinagar much work in refrigeration, as done at very high altitudes is to be had before the shock of the earthquake.

In the great famine of 1877-8, through the efforts of Mr. Paine to the extent stated in the village, it is stated that the population was reduced from 121,418 to 70,000.

Epitaphs of children are unfortunately frequent. In the thirteenth century there were two epidemics, that of 1822 probably proving the most disastrous. 5,500 persons died at Srinagar and the next day in one day more in fact. All business was stopped, and the only shops which remained open were those of the makers of white cloth for wedding shawls. The epidemics were regarded with dread by the filthy habits of the people and the neglect of sanitation. Since then conditions have improved. A good health society has taken the initiative to keep antiseptic specimens in hand, and well dressed my friends are regarding the general state. Streets have been paved and many native pits and excavations have been filled in, but much still remains to be done.

In spite of drawbacks, the population has risen from 118,540 in 1891 to 121,418 in 1901. Of this total 25,871 are Hindus and 95,547 are Muslims. The area covered is 15,327 persons per square mile, an increase of 451 since 1891. The Kashmiris are undoubtedly a proud race, and feeling of self to foreigner are not uncommon.

The name Kashmir about Kashmir is also only a shadow. The name received its death blow in 1819, when war broke out between Germany and France, and the lingering hope of revival was shattered by the famine of 1877-8, when the poor weakly shawl-weavers died like flies. A full description of shawl-weaving will be found in Munro's *Trek*, vol. II.

chap. 21. The State took Rs. 20 per annum from employers of shawl-weavers per hand, an export duty of 30 per cent on the manufactured article, and an export duty of Rs. 7-13 on a long shawl and Rs. 5-13 on a square shawl. But the weavers earned only one or two annas per day. According to Mr. Innes, the hand-loom shawl dates back to the times of the emperor Akbar. The first shawls were manufactured for export were brought by Napier, at the time of the campaign at Feroz, as a present for his English friends and thus the use of shawls became fashionable. The shawl was made of the finest wool, gathered from the goats of the mountain districts, the best material coming from the Tana State, the Himalayas and Ladakh. The first shawls were made and sold between the years 1815-19. Prices ranged from Rs. 12 to Rs. 100. British goods from Rs. 2 to 20. The value of shawls averaged 25 to 28 lakhs per annum, and when the trade was at its height 25,000 to 30,000 persons were employed in the manufacture.

Figure 4

[illegible]

Р.Р.Мирза

The acquired work of paper artists once had a great reputation, but as present the activity is in a somewhat reduced condition. The author of real paper artists made from the pulp of paper at home, and the latter works chiefly upon their beauty, design to smooth wood. These designs are very intricate and the drawing is as finished. The skill shown by them in sketching and engraving is remarkable. The work is known as *hand-drawn* or *the best*.

specimens of the old work were pro boxes (*balandis*) but a variety of styles, such as tables, chairs, and trunks are now made, and the richer classes decorate their ceilings and walls. Paper paste has perhaps suffered more than any other industry from the taste of the foreign purchaser, and copper and other European varnishes are now largely used.

The silver work is extremely beautiful, and some of the ^{silver} ^{work} indigenous patterns, the design and shape and are of exquisite design. The silversmith works with a hammer and chisel, and will perfectly copy any design that may be given to him. Compliments are very common regarding the quality of the silver put into the work, and great success in the art would be a boon, not only to the purchaser but also to the ^{material} ^{cost}.

There is the most effective painter in the copper work. ^{copper} ^{work} The ^{work} ^{man} ^{who} ^{works} ^{with} ^a ^{hammer} ^{and} ^{chisel}, and many of the present copperworkers are men who used once to work in silver. They also work in brass. Their designs are very quaint and bold, and they are very ready to adopt any new pattern that may be offered to them. The copper work of Srinagar is admirably adapted for electroplating, and some months back even got a fair haul of orders especially for electroplating. A large demand has arisen for boxes of copper trays framed in silver or carved walnut-wood, and the carpenter is now the main ally of the copperworker. (If the enamel work the painter on brass are the best, though the engraved silver work is very pretty. A development of the art has been the representation of Chinese troops and horses, and of Hindoo and Kashmiri copper vessels. After studying these there are hurried in the north to wherever wanted to give an appearance of age.

The woodwork perhaps lacks the finish of the Punjab ^{wood} ^{work} ^{man}, but the Kashmiri ^{work} ^{man} ^{is} ^{used} ^{to} ^{work} ⁱⁿ ^{his} ^{own} ^{style} as a designer. He works with a hammer and chisel and a great deal of the roughness and coarseness of his work is due to the difficulty of carving unvarnished walnut-wood. The carving is not such better than it was formerly the patterns are larger and the carving very deep. Beautiful ceilings of perfect design, cheap and effective, are made by a few carpenters, who with marvellous skill press together two layers of pine-wood. This is known as *shashand*. A great impetus has been given to the industry by the builders of house boats, and the darker colours of the walnut-wood have been mixed with the lighter shades of the pine. A good specimen of modern woodwork is found in the well-known shrine of

Nagashhandi not far from the Jinnah Masjid. A few of the *Atanashand* castles have been introduced into England.

Leather. There is a large trade in leather. Hides are procured in the villages by the State and are then brought to Srinagar where they undergo further preparation. The leather portmanteaux and valises made in Srinagar stand on a par with those made in England and leather bags would survive.

Furs. The furriers of Srinagar chiefly depend for their livelihood on the business given to them by sportsmen, who send in skins to be cured. The sportsmen for the porcupine and game, under which the sale of skins and horns is prohibited, has curtailed the business of the furriers.

Population. The lapidaries possess very great skill, and are especially profuse and as artists.

Paper. Kashmir was more famous for its paper, which was much in request in India for manuscript, and was used by all who wished to report upon to their correspondents. The pulp from which the paper is made is a mixture of sage and hemp fibre, obtained by crushing these materials under a lever mill, worked by water power. Lime and some kind of ash are then added to whiten the pulp. The pulp is then placed in skins brought in from the sea, and mixed with water, and from this mixture a layer of the pulp is extruded on a tight frame of reeds. This layer is the paper, which is pressed and dried in the sun. Next it is polished with pum-stone, and its surface is glazed with rice-water. A final polishing with urys stone is given, and the paper is then ready for use. It is durable and in many ways excellent, but it cannot compare with the cheap and paper of India.

Boats. The boating industry chiefly concerns the people of the city. For holiday boats owned by private persons and used for private purposes, there are about 2,400 boats employed on trade and passenger traffic. The greater portion of the grain and wood imported by river is brought in large barges, not unlike canal barges. These are towed or poled upstream and drop down the river with the current. There are two kinds of barge. The larger will carry a cargo of 500 to 1,000 maunds, while the smaller can carry 400 maunds. One of the most common form of boats is the *dogra*, a flat-bottomed boat about 50 to 60 feet in length, and about 5 feet in width, drawing about 2 feet of water.

Education. A high school is maintained by the State with an average daily attendance of 375 in 1900-1, and several primary schools are scattered about in the various *stadans*. Excellent results

are said to be attained but though the quality may be good, the quantity is small.

There is an excellent State hospital in Srinagar, at which Hospitals about 11,000 in-patients and 18,000 out-patients are treated in the year; and two branch dispensaries which deal with 32,500 out-patients annually. A new hospital was completed in 1899 at a cost of Rs. 40,000.

In medical as well as in educational work Srinagar is fortunate in enjoying as auxiliaries to the State schools and hospitals the able and unselfish services of the Church Missionary Society. The history of the mission is interesting, and recalls the honoured names of Robert Clark, Elmée, Maxwell, and Downes. Opposed, despised, and persecuted, these good men stuck bravely to their work and the small and almost hopeless beginning made in 1865 by Doctor Evershe, without a habitation and without friends, has grown into a well-equipped force which plays a civilising part in the lives of the people. Outward opposition has given place to genuine admiration, and in 1893 the present Maharaja presided at the opening of the women's wards of the mission hospital. The leper asylum has been made over to the care of the mission. At the beginning of 1901 this had 76 patients, and 69 others were admitted during the year. In the same year the Medical Mission treated 14,515 out-patients and 1,251 in-patients, paid 36,969 rupees, and performed 3,147 operations. Apart from the work done at the hospital the missionaries tour in the most remote parts of the State.

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40. *What is the main reason for the increase in the number of people who are obese?*

[illegible]

1. *Handwritten text:* "I have been thinking about you a lot lately. I hope you are well. I have been busy with work, but I always find time to think of my friends."

[illegible]

4. The ... of the ... is ...

4. *Blasius* (1906) and *Blasius* (1907) are the same person.

1. The first step is to identify the problem.
 2. The second step is to define the problem.
 3. The third step is to analyze the problem.
 4. The fourth step is to develop a solution.
 5. The fifth step is to implement the solution.
 6. The sixth step is to evaluate the solution.
 7. The seventh step is to monitor the solution.
 8. The eighth step is to maintain the solution.
 9. The ninth step is to improve the solution.
 10. The tenth step is to document the solution.

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1. *What is the main purpose of the study?*
 2. *What are the research objectives?*
 3. *What is the significance of the study?*

1. The first step is to identify the problem. This involves understanding the situation and the goal.

§ 161.2. *Residence a necessary element in-*

The first step is to identify the main components of the system. This involves understanding the hardware and software involved, as well as the data flow and the roles of the various participants.

1. The first part of the document is a letter from the President of the United States to the President of the Senate, dated January 1, 1901. The letter is signed by William McKinley and is addressed to John D. Long. The letter is a copy of a letter that was sent to the President of the Senate by the President of the United States. The letter is a copy of a letter that was sent to the President of the Senate by the President of the United States. The letter is a copy of a letter that was sent to the President of the Senate by the President of the United States.

1. *What is the purpose of the study?*
 2. *What are the research questions?*
 3. *What are the hypotheses?*
 4. *What are the variables?*
 5. *What are the methods?*
 6. *What are the results?*
 7. *What are the conclusions?*
 8. *What are the implications?*
 9. *What are the limitations?*
 10. *What are the future directions?*

$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$

Journal of Management Education 30(6)p. 789-804
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1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

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1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

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4 April 1997

$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

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1. *Chlorophyll a* (Chl *a*)

[illegible]

Zain-ul-abidin (1300), his wife, *hufana* reign, 24, 25; encouraged Hindu religion and learning, 24; introduced Persian as official language, 24; repulsed the Chakka, 25; hid refuge for bones in the Wular Lake, 93; built the Jama Masjid, 118.

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Zaskar river, one of the great tributaries of the Indus, 14, 86.

Zoolingy. See Fauna.

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NORTH-WEST FRONTIER PROVINCE AND KASHMIR

Scale: 1 inch = 100 miles or 160 kilometers
British Miles

Native States indicated by
dashed lines and in parentheses
Rivers shown in blue



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